

Tyr Gly Ile Gly Leu Ser Lys Gly Ala Gln Tyr Gly Pro Lys Glu Val  
 340 345 350  
 Met Pro Tyr Pro Pro Asp Ser Trp Leu Val Ala Val Trp Val Glu Thr  
 355 360 365  
 Gly Ile Val Gly Leu Met Leu Tyr Leu Leu Ile His Gly Val Leu Phe  
 370 375 380  
 Ala Trp Cys Ser Trp Leu Met Phe Arg Ile Met Asn Gln Arg Leu  
 385 390 395 400  
 Arg Gly Leu Leu Ala Ala Trp Leu Cys Met Asn Ala Gly Phe Phe Ile  
 405 410 415  
 Ala Ala Tyr Ala Asn Asp Val Met Gln Tyr Pro Asn Ser Ile Ile Val  
 420 425 430  
 Tyr Thr Gly Phe Ala Leu Cys Ile Ala Gly Pro Tyr Ile Asp Pro Val  
 435 440 445  
 Met Gln Lys Glu Asp Glu Glu Leu Glu Arg Glu Arg Lys Glu Lys Lys  
 450 455 460  
 Lys Arg Asp  
 465

<210> 7673  
 <211> 149  
 <212> PRT  
 <213> B.fragilis

<400> 7673  
 Thr Ile Lys Arg Ser Cys Met Gly Asp Ile Asp Ile Leu Asn Lys Phe  
 1 5 10 15  
 Asp Asn Asp Lys Leu Ile Asp Val Val Lys Asn Tyr Lys Arg Tyr Gly  
 20 25 30  
 Tyr Asp Asp Glu Leu Arg Asp Tyr Ala Ile Asn Leu Leu Gly Glu Arg  
 35 40 45  
 Gly Trp Ser Arg Glu Asp Leu Gln Gln Phe Gly Tyr Leu Thr Asn Tyr  
 50 55 60  
 Asp Tyr Asp Glu Ala Glu Lys Gln Tyr Lys Ala Tyr Asn Arg Asn Ser  
 65 70 75 80  
 Leu Ile Gly Ile Cys Thr Leu Val Phe Ser Gly Gly Ile Leu Ala Val  
 85 90 95  
 Val Tyr Leu Ile Phe Leu Ile Leu Ala Tyr Arg Asn Val Ala Lys Phe  
 100 105 110  
 Tyr Asn Ala Leu Gly His Asn Gln Asp Glu Thr Ala Leu Phe Asn Ala  
 115 120 125  
 Leu Gly Val Leu Ala Tyr Phe His Leu Lys Gly Arg Met Lys Glu Glu  
 130 135 140  
 Leu Lys Gly Ile Arg  
 145

<210> 7674  
 <211> 269  
 <212> PRT  
 <213> B.fragilis

<400> 7674  
 Leu Lys Arg Arg Leu Met Thr Gly Glu Leu Asn His Ser Arg Glu Arg  
 1 5 10 15  
 Leu Glu Lys Gln Lys Ile Lys Asn Val Met Ala Lys Ile Phe Ile Ile  
 20 25 30  
 Leu Ile Ile Thr Leu Cys Thr Gly Cys Phe Gly Lys Gln His Ser Ser  
 35 40 45  
 Lys His Asn Asn Val Ser Asn Ile Asn Glu Ser Asp Ile Gln Leu Asp

50		55		60	
Ser Leu Pro Leu Thr Lys Tyr Glu Tyr Lys Met Arg Gly Asn Leu Lys					
65		70		75	80
Asp Asp Ile Gly Asp Lys Leu Gly Ala Ile Glu Asp Tyr Ala Arg Ala					
	85		90		95
Ile Lys Ile Asp Thr Ser Tyr Asp Thr Ala Tyr Tyr Asn Arg Gly Leu					
	100		105		110
Met Lys Ser Ala Ile Gly Asp Arg Glu Gly Glu Leu Ala Asp Tyr Asn					
	115		120		125
Lys Thr Leu Ser Ile Asn Pro Lys Tyr Leu Lys Ala Tyr Phe Asn Arg					
	130		135		140
Gly Leu Leu Lys Tyr Glu Met Gly Asp Tyr Glu Gly Glu Ile Ala Asp					
145		150		155	160
Tyr Arg Leu Ala Ile Lys Tyr Cys Lys Pro Asp Ala Asp Ile Tyr Asn					
	165		170		175
Asn Leu Gly Arg Ala Leu Tyr Asp Leu Glu Arg Phe Lys Glu Ser Ala					
	180		185		190
Glu Ala Tyr Gly Glu Gly Ile Lys Tyr Phe Pro Glu Asp Tyr Arg Leu					
	195		200		205
Tyr Tyr Gly Arg Gly Leu Ala Arg Lys Arg Leu Gly Asp Arg Lys Gly					
210		215		220	
Ala Cys Glu Asp Trp Val Lys Ser Ser Glu Leu Gly Cys Thr Gln Ala					
225		230		235	240
Asn Ile Leu Leu Pro Leu Cys Asp Glu Tyr Ile Lys Glu Glu Asn Asp					
	245		250		255
Ser Leu Lys Lys Glu Lys Glu Ser Ala Asn Lys Ile Glu					
	260		265		

&lt;210&gt; 7675

&lt;211&gt; 632

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7675

Ile Met Asn Arg Asn Leu Leu Met Pro Val Ala Val Ser Leu Ile Leu		
1	5	10
Leu Ser Gly Cys Lys Tyr Asn Asp Asp Asn Phe Glu Gly Leu Asp Asp		
	20	25
Met Thr Gln Pro Thr Asn Leu Met Lys Ile Glu Tyr Thr Leu Thr Asp		
	35	40
Ala Asp Tyr Ala Thr Ile Ser Thr Asn Ser Val Asn Lys Asp Ser Ala		
	50	55
Ala Asn His Lys Pro Asp Asp Leu Ser Lys Asp Leu Ala Asn Val Lys		
65	70	75
Thr Asn Met Tyr Leu Thr Glu Lys Ile Thr Gly Ala Thr Tyr Ile Pro		
	85	90
Ala Phe Leu Leu Asp Lys Tyr Tyr Thr Ala Asp Lys Gly Ser Ser Ala		
	100	105
Lys Ile Thr Tyr Lys Tyr Lys Glu Ala Met Ser Ser Leu Leu Ser Glu		
	115	120
Tyr Ala Ser Val Lys Tyr Leu Lys Pro Thr Asp Ala Glu Tyr Lys Leu		
	130	135
Val Tyr Gly Glu Asn Ala Phe Ala Pro Tyr Leu Asn Glu Lys Thr Glu		
145	150	155
Gly Gln Met Ser Lys Ile Leu Asn Glu Lys Phe Lys Asp Ala Glu Lys		
	165	170
Gly Thr Ala Val Phe Val Asp Tyr Lys Leu Gly Glu Gly Gln Leu Glu		
	180	185
Asn Pro Leu Met Trp Gln Asn Phe Glu Ala Leu Pro Thr Gly Asp Leu		

	195		200		205										
Lys	Glu	Leu	Lys	Gly	Trp	Phe	Ile	Ser	Ser	Thr	Gly	Asp	Thr	Gln	Trp
	210					215					220				
Lys	Val	Thr	Ser	Tyr	Asp	Asp	Asn	Gln	Tyr	Val	Gln	Tyr	Ser	Ala	Asn
	225				230					235					240
Gly	Thr	Lys	Gly	Ala	Cys	Val	Gly	Trp	Met	Val	Thr	Pro	Ala	Ile	Ser
				245					250					255	
Val	Thr	Ala	Gly	Asp	Tyr	Leu	Ala	Phe	Asp	Val	Thr	Val	Gly	Tyr	Tyr
			260				265					270			
Asn	Ala	Ser	Cys	Leu	Ser	Ile	Leu	Ile	Ser	Glu	Asn	Phe	Asp	Gly	Lys
	275						280					285			
Asn	Val	Gly	Thr	Ala	Asn	Trp	Val	Asp	Val	Thr	Ser	Asp	Phe	Ser	Ile
	290					295					300				
Pro	Thr	Lys	Pro	Thr	Ser	Gly	Tyr	Gly	Thr	Phe	Ala	Ser	Ala	Gly	Lys
	305				310					315					320
Val	Ser	Leu	Ser	Ala	Tyr	Ala	Gly	Lys	Lys	Val	Tyr	Val	Ala	Phe	Lys
				325					330					335	
Tyr	Glu	Gly	Asp	Gly	Ala	Asn	Lys	Lys	Thr	Thr	Thr	Tyr	Gln	Ile	Asp
			340				345					350			
Asn	Ile	Met	Val	Gly	Thr	Ser	Ile	Pro	Ala	Asn	Ser	Leu	Ser	Thr	Pro
	355					360					365				
Thr	Tyr	Ala	Val	Lys	Val	Tyr	Asp	Gly	Lys	Asn	Trp	Lys	Asn	Lys	Ser
	370				375						380				
Asn	Ser	Val	Tyr	Val	Leu	Thr	Tyr	Ala	Asp	Tyr	Gly	Asp	Met	Gly	Gln
	385				390				395						400
Ser	Lys	Arg	Tyr	Phe	Thr	Ser	Asp	Val	Pro	Ala	Val	Asn	Tyr	Leu	Pro
				405				410						415	
Ala	Tyr	Leu	Ser	Lys	Met	Val	Ala	Tyr	Pro	Val	Asp	Gly	Asp	Ala	Arg
			420				425					430			
Val	Val	Val	Tyr	Arg	Phe	Tyr	Asn	Gly	Lys	Ala	Leu	Asn	Ile	Tyr	Ser
	435					440					445				
Asp	Glu	Tyr	Thr	Tyr	Ser	Ala	Glu	Lys	Ala	Arg	Trp	Glu	Leu	Asn	Thr
	450				455						460				
Arg	Ile	Val	Asp	Lys	Thr	Glu	Gln	Phe	Val	Leu	Ser	Asp	Gly	Lys	Trp
	465				470				475						480
Asn	Phe	Asp	Pro	Ser	Thr	Val	Val	Thr	Leu	Lys	Ala	Glu	Lys	Gly	Asn
				485				490						495	
Val	Glu	Ala	Ala	Phe	Tyr	Gln	Ala	Ile	Thr	Asp	Trp	Val	Lys	Glu	
		500					505					510			
Asn	His	Pro	Glu	Tyr	Val	Thr	Ser	Tyr	Gly	Asn	Asn	Asp	Tyr	Tyr	Tyr
	515					520						525			
Gly	Gly	Ser	Ala	Tyr	Asn	Asn	Asn	Phe	Asp	Phe	Arg	Pro	Ser	Ala	Trp
	530				535						540				
Lys	Ala	Gln	Asn	Ala	Ser	Ala	Tyr	Gly	Ser	Met	Ser	Asp	Ala	Asp	Leu
	545				550				555						560
Thr	Lys	Leu	Met	Phe	Glu	Arg	Leu	Pro	Glu	Ala	Phe	Leu	Pro	Gly	Leu
				565				570						575	
Lys	Ala	Ile	Tyr	Gly	Ser	Ala	Asp	Val	Val	Glu	Gly	Val	Asp	Val	Phe
		580					585					590			
Tyr	Thr	Ile	Asn	Phe	Ala	Ile	Tyr	Asp	Gly	Ser	Ser	Thr	Thr	Gln	Tyr
	595					600						605			
Thr	Ile	Lys	Tyr	Lys	Val	Thr	Gly	Lys	Gly	Gln	Phe	Glu	Tyr	Val	Ala
	610				615						620				
Asp	Ser	Leu	Thr	Lys	Lys	Val	Glu								
	625				630										

&lt;210&gt; 7676

&lt;211&gt; 464

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7676

Lys	Thr	Ile	Arg	Thr	Met	Glu	Asp	Asn	Lys	Asn	Lys	Ser	Glu	Val	Gln
1				5					10					15	
Ala	Gln	Glu	Thr	Val	Gln	Val	Ser	Tyr	Lys	Glu	Lys	Asn	Gly	Glu	Ser
			20					25					30		
Ser	Leu	Ala	Ser	Ala	Leu	Asp	Val	Leu	Ser	Arg	Phe	Gly	Gly	Phe	Asn
		35					40					45			
Phe	Leu	Glu	Ser	Thr	Val	Asp	Gly	Val	Gln	Asn	Leu	Asn	Pro	Glu	Arg
	50					55				60					
Lys	Ala	Arg	Lys	Lys	Ile	Phe	Leu	Thr	Asp	Glu	Gln	Lys	Gln	Glu	Glu
65					70					75					80
Arg	Glu	Val	Leu	Lys	Asn	Lys	Ile	Asp	Met	Trp	Ile	Asp	Leu	Leu	Asn
				85					90					95	
Ser	Ser	Ser	Ala	Val	Thr	Glu	Met	Ile	Ala	Thr	Ser	Lys	Ala	Lys	Ser
			100					105					110		
Glu	Ala	Ala	Ala	Ser	His	Leu	Ala	Lys	Ser	Gln	Leu	Val	Ala	Val	Gln
		115					120					125			
Ser	Val	Arg	Asp	Met	Glu	Gln	Ala	Tyr	Arg	Gly	Val	Met	Leu	Phe	Tyr
	130					135					140				
Lys	Asn	Thr	Glu	Ala	Asp	Lys	Val	Asn	Asn	Val	Thr	Ile	Val	Asn	Ala
145					150					155					160
Ser	Lys	Glu	Gln	Leu	Thr	Asp	Leu	Asp	Asn	Pro	Arg	Phe	Ile	Asp	Phe
				165					170					175	
Val	Ala	Arg	Glu	Leu	Lys	Gln	Asn	Tyr	Asp	Lys	Leu	Asp	Leu	Arg	Gln
			180					185					190		
Asn	Tyr	Ser	Leu	Leu	Ala	Ile	Pro	Gly	Tyr	Leu	Gly	Ser	Asn	Lys	Val
		195					200					205			
Leu	Glu	Lys	Trp	Ala	Lys	Ile	Ala	Tyr	Glu	Asn	Lys	Val	Met	Leu	Tyr
	210					215					220				
Thr	Asp	Phe	Ala	Asp	Leu	Asp	Lys	Pro	Glu	Asp	Val	Val	Glu	Leu	Phe
225					230					235					240
Ser	Ser	Ser	Asn	Met	Ala	Ser	Gly	Glu	Ala	Phe	Lys	Ser	Asn	Thr	Cys
				245					250					255	
Met	Thr	Cys	Asn	Trp	Leu	Val	Gly	Arg	Ala	Gly	Tyr	Arg	Glu	Ile	Gly
			260					265					270		
Glu	Glu	Glu	Asp	Leu	His	Ile	Ser	Pro	Ser	Ile	Ala	Leu	Met	Gly	Lys
	275						280					285			
Val	Tyr	Thr	Thr	Leu	Met	Ser	Gln	Val	Thr	Ala	Gly	Lys	Lys	Tyr	Gly
	290					295					300				
Gly	Ile	Asn	Glu	Ile	Asp	Ala	Val	Val	Phe	Pro	Leu	Lys	Lys	Ser	Glu
305					310					315					320
Ile	Ser	Gln	Leu	Glu	Lys	Met	Gly	Leu	Ile	Pro	Met	Val	Asn	Glu	Tyr
				325					330					335	
Gly	Lys	Val	Met	Ala	Phe	Ser	Ala	Lys	Thr	Leu	Phe	Asn	Gly	Asp	Asn
			340					345					350		
Leu	Gly	Leu	Gln	Thr	Tyr	Ser	Val	Val	Arg	Val	Phe	Asp	Tyr	Ile	Thr
		355					360					365			
Lys	Val	Leu	Phe	Asp	Phe	Leu	Asn	Arg	Arg	Ser	Phe	Glu	Asn	Trp	Ser
	370					375					380				
Ser	Lys	Thr	Glu	Arg	Asp	Leu	Arg	Gly	Gln	Ile	Val	Gln	Tyr	Leu	Asp
385					390					395					400
Ser	Val	Gln	Gly	Ala	Asp	Arg	Leu	Ile	Glu	Lys	Phe	Lys	Ile	Ile	Arg
				405					410					415	
Phe	Glu	Gln	Asp	Gln	Lys	Gln	Lys	Asp	Arg	Ile	Tyr	Leu	Asp	Ile	His
			420					425					430		
Met	Thr	Pro	Phe	Phe	Pro	Ala	Lys	Ser	Phe	Val	Ile	Lys	Leu	Asp	Gly
		435					440						445		

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500



[illegible]

<400> 7677

Ile 1	Gly	Gln	Ser	Met 5	Asp	Arg	Ile	Leu	His 10	Asp	Val	Asp	Asn	Ala 15	His
Lys	Ile	Leu	Gln 20	Leu	Thr	Ser	Asp 25	Thr	Leu	Ile	Leu	Val 30	Asp	Lys	Asn
Gly	Thr	Cys 35	Leu	Asp	Ile	Asp 40	Pro	His	Ser	Asp	Leu 45	Trp	Phe	Leu	Gln
Glu	Asp 50	Arg	Leu	Leu	Gly 55	Asn	Leu	Phe	Asn 60	Leu	Leu	Pro	Asp	His	
Thr 65	Phe	Gln	Lys	Leu 70	Leu	Pro	Asp	Phe	Lys 75	Arg	Val	Thr	Gln	Gln	Gly 80
Ile	Thr	Val	Asn 85	Arg	Asn	Tyr	Arg	Leu 90	Pro	Leu	Glu	Gly 95	Gly	Glu	Thr
Tyr	Tyr	Phe 100	Lys	Cys	Ile	Met	Gln 105	Pro	Tyr	Asp	Cys	Asp 110	Lys	Val	Leu
Cys	Gln	Tyr 115	Arg	Asp	Ile	Thr	Ala 120	Arg	Asn	Asn	Val 125	Lys	Leu	Gln	Leu
Glu	Arg 130	Thr	Asn	Tyr	Asp	Leu 135	Lys	Glu	Ile	Gln 140	Lys	Ala	Ala	Gln	Ile
Gly 145	Gln	Trp	Lys	Tyr 150	Ser	Ser	Arg	Glu	Arg 155	Thr	Phe	Tyr	Tyr	Arg	Gly 160
Tyr	Asn	Gly	Ile 165	Val	Cys	Thr	Glu	Glu 170	Glu	Arg	Ser	Ile 175	Asn	Phe	Gln
Asp	Tyr	Tyr 180	Glu	Thr	Ile	Leu	Ser 185	Glu	Asp	Leu	Pro	Ala 190	Val	Asn	Thr
Trp	Met	Glu 195	Ala	Asn	Arg	Arg 200	Glu	Leu	Leu	Lys 205	Glu	Tyr	Ile	Glu	Tyr
Arg	Ile 210	Leu	Leu	Glu	Gly 215	Gln	Val	Tyr	Tyr 220	Met	Arg	Gln	Gln	Cys	Tyr
Leu 225	Arg	Asn	Glu	Glu 230	Glu	Asp	Gly	Asn	Ile 235	Val	Leu	Glu	Gly	Tyr	Ile 240
Gln	Asn	Ile	Thr 245	Asp	Ile	Gln	Arg	Lys 250	Arg	Asn	Asp	Ile 255	Asn	Thr	Leu
Thr	His	Ala 260	Ile	Asn	Asn	Ala	Lys 265	Glu	Ser	Val	Tyr	Ala 270	Ala	Arg	Arg
Asp	Gly 275	Thr	Leu	Ile	Phe	Ala 280	Asn	Arg	Gln	Phe	Arg 285	Leu	Asn	His	Arg
Ile	Ala 290	Glu	Gln	Ala	Asp 295	Leu	Ser	Leu	Ile 300	Arg	Val	Phe	Asp	Val	Val
Gly 305	Asp	Met	Thr	Cys 310	Ile	Glu	Asp	Trp	Glu 315	Glu	Arg	Tyr	Arg	Ser	Ile 320
Arg	Glu	Gly	Gln 325	Thr	Leu	Asn	Phe 330	Leu	Ala 335	Tyr	Gln	Pro	Leu	Lys	His
Asp	Lys	Asn	Thr 340	Leu	Ala	Phe 345	Glu	Gly	Thr 350	Met	Tyr	Ser	Val	Thr	Thr
Asp	Asp 355	Gly	Glu	Glu	Thr	Phe 360	Trp	Ser	Phe 365	Thr	His	Asp	Ile	Ser	Glu
Arg	Ile 370	Arg	Tyr	Glu	Ser 375	Gln	Ile	Lys	Arg 380	Phe	Asn	Arg	Ile	Met	Asp
Thr 385	Thr	Met	Glu	Asn 390	Ile	Pro	Ala	Gly	Ile 395	Val	Lys	Asp	Ile	Glu	400

Asn Asp Phe Arg Tyr Ile Tyr Arg Asn Arg Glu Ser Tyr Asn Arg Asp  
 405 410 415  
 Ile Ser Ser Glu Asn Ala Ile Gly Met Asn Asp Phe Asp Tyr Tyr Pro  
 420 425 430  
 Pro Glu Met Ala Gln Gln Lys Arg Lys Glu Asp Met Glu Ile Ala Ala  
 435 440 445  
 Thr Gly Lys Gly Met His Trp Ile Met Glu Gly Lys Asp Lys Asn Gly  
 450 455 460  
 Asn Leu Leu Ile Leu Asp Lys Gln Lys Ile Met Val Glu Ser Glu Asp  
 465 470 475 480  
 Phe Ser Pro Ile Ile Val Ser Ile Glu Trp Asp Ile Thr Gln Leu Glu  
 485 490 495  
 Leu Met Arg Arg Glu Leu Ile Glu Ser Lys Glu Lys Ala Glu Thr Ser  
 500 505 510  
 Asp Lys Leu Lys Ser Ala Phe Leu Ala Asn Met Ser His Glu Ile Arg  
 515 520 525  
 Thr Pro Leu Asn Ala Ile Val Gly Phe Ser Arg Ile Ile Ser Glu Ser  
 530 535 540  
 Asp Asn Ala Glu Glu Arg Arg Glu Tyr Tyr Glu Ile Val Asp Ala Asn  
 545 550 555 560  
 Asn Glu Arg Leu Leu Gln Leu Ile Asn Glu Ile Leu Asp Leu Ser Lys  
 565 570 575  
 Ile Glu Ser Gly Ile Val Glu Phe Thr Tyr Gly Pro Val Arg Leu His  
 580 585 590  
 Thr Leu Cys Lys Glu Ile His Asp Ala His Val Phe Arg Cys Pro Gln  
 595 600 605  
 Gly Val Glu Leu Arg Phe Asp Ser Pro Asp Glu Ala Leu Ser Ile His  
 610 615 620  
 Ser Asp Lys Asn Arg Ile Phe Gln Val Phe Ser Asn Leu Ile Gly Asn  
 625 630 635 640  
 Ala Phe Lys Phe Thr Thr Glu Gly Ser Val Ser Tyr Gly Tyr Lys Gln  
 645 650 655  
 Glu Gly Glu Arg Val Val Phe Tyr Val Lys Asp Thr Gly Leu Gly Ile  
 660 665 670  
 Glu Pro Glu Lys Leu Gly Arg Val Phe Gln Arg Phe Ala Lys Leu Asn  
 675 680 685  
 Asn Phe Ala Gln Gly Thr Gly Leu Gly Leu Ser Ile Cys Lys Thr Ile  
 690 695 700  
 Ile Glu Arg Leu Gly Gly Glu Ile Ala Val Ser Ser Glu Val Gly Thr  
 705 710 715 720  
 Gly Thr Thr Phe Thr Phe Trp Leu Pro Leu Glu Asn Val Ile Gln Asp  
 725 730 735  
 Thr Glu Thr Gly Thr Asn Ser His Leu Pro Arg Arg Ser Arg Arg Asn  
 740 745 750  
 Thr Ala Val Gly Ser Ala Pro Gly Gln Arg Gly Asn Asp Gly Lys Gly  
 755 760 765  
 Arg Gly Pro Ser Gly Asn Arg Ser Arg Asn Gly Glu Ser His His Thr  
 770 775 780  
 Asp Ser Arg Arg His Arg Gln Gln Leu Arg Pro Ala Glu Arg Tyr Ser  
 785 790 795 800  
 Gly

&lt;210&gt; 7678

&lt;211&gt; 154

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7678

Lys Gln Lys Arg Gln Met Ala Ile Leu Glu Tyr Gly Ile Gly Gly Asn  
 1 5 10 15  
 Glu Val Lys Val Asp Thr Ser Glu Ala Ile Ala Asn Ile Pro Glu Asn  
 20 25 30  
 Arg Ser Leu Ile Val Glu Gln Leu Thr Ala Asp Glu Pro Val Thr Pro  
 35 40 45  
 Glu Ala Val Lys Gly Leu Ser Thr Ile Glu Glu Val Phe Ala His Phe  
 50 55 60  
 Leu Pro Asn Ile Asp Val Glu Phe Glu Asn Glu Gly Gln Pro Val  
 65 70 75 80  
 Lys Glu Asn Phe Arg Phe Ser Ser Val Ala Asp Phe Ser Val Lys Asn  
 85 90 95  
 Met Thr Gln Asn Ser Pro Phe Leu His Lys Leu Asp Thr Glu Lys Thr  
 100 105 110  
 Phe Tyr Glu Gly Met Val Thr Gln Leu Arg Ser Asn Lys Val Leu Gln  
 115 120 125  
 Arg Val Leu Glu Asn Pro Glu Ser Lys Lys Ala Phe Ile Ser Ala Leu  
 130 135 140  
 Glu Ala Leu Ser Asn Glu Leu Lys Thr Glu  
 145 150

&lt;210&gt; 7679

&lt;211&gt; 934

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7679

Leu Thr Lys Arg Ile Met Arg Arg His Leu Ile His Phe Leu Leu Val  
 1 5 10 15  
 Ala Val Leu Thr Val Cys Ser Ala Ala Thr Ala Ile Ala Gln Val Thr  
 20 25 30  
 Val Lys Gly Gln Val Val Asp Ala Glu Thr Gly Glu Pro Leu Ile Gly  
 35 40 45  
 Ala Ala Val Thr Ile Val Gly Thr Thr Gln Gly Ser Val Thr Asn Leu  
 50 55 60  
 Asp Gly Met Phe Thr Gln Lys Ala Ala Ser Gly Ser Thr Leu Leu Ile  
 65 70 75 80  
 Lys Tyr Leu Gly Tyr Lys Glu Phe Ser Lys Lys Ile Thr Gln Lys Gly  
 85 90 95  
 Gly Thr Glu Asp Leu Gly Val Ile Lys Met Ala Ala Asp Ala Met Val  
 100 105 110  
 Leu Asn Asp Val Ile Ile Thr Ser Ser Val Ala Val Ser Arg Lys Thr  
 115 120 125  
 Pro Val Ala Val Ser Thr Val Asp Pro Val Phe Ile Glu Glu Lys Leu  
 130 135 140  
 Gly Thr Gln Glu Phe Pro Glu Val Leu Lys Ser Thr Pro Gly Ile Tyr  
 145 150 155 160  
 Ala Thr Lys Gln Gly Gly Gly Phe Gly Asp Ser Lys Val Asn Ile Arg  
 165 170 175  
 Gly Phe Lys Thr Glu Asn Ser Ala Met Met Ile Asn Gly Val Pro Met  
 180 185 190  
 Asn Asp Met Glu Trp Gly Gly Ile Tyr Trp Ser Asn Trp Ala Gly Leu  
 195 200 205  
 Ser Asp Val Thr Arg Ser Met Gln Val Gln Arg Gly Leu Gly Ala Ser  
 210 215 220  
 Lys Val Ala Ala Pro Ser Val Gly Gly Ser Ile Asn Ile Val Thr Asn  
 225 230 235 240  
 Thr Ile Asp Ala Asn Lys Gly Gly Phe Val Ser Tyr Gly Met Gly Asn  
 245 250 255

Asp	Gly	Leu	Asn	Lys	Ile	Leu	Phe	Lys	Val	Ser	Thr	Gly	Leu	Thr	Lys
		260						265					270		
Ser	Gly	Trp	Ala	Met	Thr	Leu	Leu	Gly	Gly	Lys	Thr	Trp	Ala	Asp	Gly
		275						280					285		
Tyr	Ile	Gln	Gly	Thr	Asn	Tyr	Glu	Ala	Tyr	Asn	Trp	Phe	Val	Asn	Ile
		290						295					300		
Thr	Lys	Arg	Phe	Asn	Asp	Asn	His	Gln	Leu	Ser	Phe	Thr	Ala	Phe	Ala
305						310					315				320
Ala	Pro	Gln	Trp	His	Asn	Gln	Arg	Gly	Asn	Lys	Asp	Gly	Leu	Thr	Ile
				325						330					335
Glu	Gly	Trp	Gln	Glu	Val	Ala	Lys	Asn	Tyr	Met	Asn	Gly	Glu	Lys	Pro
			340						345				350		
Tyr	Arg	Tyr	Asn	Pro	Thr	Tyr	Gly	Phe	Gly	Leu	Asn	Gly	Gln	Arg	Lys
		355						360					365		
Ser	Ser	Ala	Tyr	Asn	Val	Tyr	Asn	Lys	Pro	Gln	Leu	Ser	Leu	Asn	His
		370						375					380		
Leu	Trp	Gln	Ile	Asn	Glu	Lys	Ser	Ser	Leu	Ser	Thr	Ala	Leu	Tyr	Ala
385						390					395				400
Ser	Ile	Gly	Arg	Gly	Tyr	Gly	Tyr	Ser	Gly	Gln	Gly	Leu	Thr	Ser	Ala
				405						410					415
Asp	Arg	Ser	Asn	Trp	Tyr	Gly	Ser	Asn	Asn	Gly	Asn	Leu	Asn	Met	Thr
			420						425						430
Phe	Arg	Lys	Ala	Asp	Gly	Thr	Phe	Ala	Tyr	Asp	Glu	Ile	Tyr	Ala	Leu
		435						440					445		
Asn	Glu	Ala	Ser	Glu	Asn	Gly	Ser	Val	Met	Ala	Met	Ser	Lys	Ser	Lys
		450						455					460		
Asn	Phe	His	Asn	Trp	Tyr	Gly	Leu	Leu	Ser	Thr	Tyr	Thr	Thr	Lys	Phe
465						470					475				480
Gly	Asp	Tyr	Phe	Asp	Phe	Tyr	Gly	Gly	Ile	Asp	Tyr	Arg	Tyr	Tyr	Lys
				485						490					495
Gly	Thr	His	Thr	Asn	Glu	Leu	Val	Asp	Leu	Tyr	Gly	Gly	Asp	Phe	Tyr
				500					505					510	
Val	Asp	Ser	Ser	Ser	Arg	Lys	Ser	Val	Leu	Ala	Ser	Asn	Asn	Ala	Ala
		515						520						525	
Ala	Ala	Ala	Gly	Ser	Ser	Phe	Val	Asn	Gln	Lys	Leu	Lys	Val	Gly	Asp
		530						535						540	
Ile	Val	Tyr	Arg	Asp	Phe	Asp	Gly	Tyr	Val	Met	Ser	Glu	Gly	Val	Phe
545						550					555				560
Ala	Gln	Gly	Glu	Tyr	Asn	Arg	Asp	Lys	Leu	Ser	Ala	Phe	Ile	Ser	Gly
				565						570					575
Ser	Val	Ser	Asn	Thr	Gly	Tyr	Trp	Arg	Tyr	Asp	Arg	Phe	Tyr	Tyr	Asp
			580						585						590
Lys	Ala	His	Ala	Lys	Ser	Lys	Thr	Val	Asn	Phe	Ile	Gly	Trp	Asn	Ala
		595						600							605
Lys	Gly	Gly	Leu	Asn	Tyr	Asn	Leu	Thr	Glu	Asn	His	Asn	Val	Phe	Ala
		610						615							620
Asn	Ile	Gly	Tyr	Ile	Ser	Arg	Ala	Pro	Phe	Phe	Ser	Gly	Gly	Ala	Phe
625						630					635				640
Leu	Asn	Ser	Thr	Val	Ser	Asn	Ala	Thr	Asn	Pro	Asp	Ala	Val	Asn	Glu
				645						650					655
Lys	Val	Phe	Ser	Phe	Glu	Ile	Gly	Tyr	Gly	Tyr	Arg	Ser	Ser	Phe	Leu
		660						665							670
Thr	Val	Asn	Ile	Asn	Ala	Tyr	His	Thr	Arg	Trp	Met	Asp	Lys	Thr	Thr
		675						680							685
Thr	Arg	Ser	Gln	Asp	Ile	Thr	Asn	Tyr	Tyr	Glu	Gly	Ser	Leu	Ser	Glu
		690						695							700
Pro	Tyr	Asp	Ala	Ser	Lys	Leu	Val	Ser	Thr	Lys	Ser	Val	Ile	Asn	Met
705						710					715				720
Gln	Gly	Val	Asn	Ala	Leu	His	Gln	Gly	Val	Glu	Leu	Asp	Phe	Val	Ala

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725 730 735  
 Lys Pro Phe Gln Trp Leu Asp Leu Ser Gly Met Phe Ser Ile Gly Asn  
 740 745 750  
 Trp Arg Trp Asp Ser Asn Ala Ser Gly Ser Phe Thr Val Glu Gly Gln  
 755 760 765  
 Phe Val Asn Ser Ala Ser Ile Lys Gly Ser Asp Gly Lys Asp Val Thr  
 770 775 780  
 Val Leu Val Asn Ala Ala Asn Gly Leu Glu Pro Gly Thr Met Lys  
 785 790 795 800  
 Leu Asn Leu Lys Asp Val Lys Val Gly Gly Ser Ala Gln Thr Thr Ala  
 805 810 815  
 Ala Leu Gly Ala Thr Phe Lys Ile Asp Lys Ala Leu Arg Leu Gly Ile  
 820 825 830  
 Asp Trp Asn Leu Tyr Ala Arg Asn Tyr Ala Asp Trp Ser Leu Asn Ser  
 835 840 845  
 Asn Asp Leu Val Met Asn Ser Glu Lys Asp Phe Ser Thr Pro Trp Arg  
 850 855 860  
 Ile Pro Thr Ala Ser Thr Phe Asp Leu Asn Ala Ser Tyr Lys Phe Asn  
 865 870 875 880  
 Phe Gly Lys Leu Asn Ala Val Leu Ser Gly Asn Val Asn Asn Leu Phe  
 885 890 895  
 Asp Gln Thr Tyr Ile Ser Asp Ala Thr Asp Gly Ser Asn His Asp Trp  
 900 905 910  
 Lys Thr Ala Tyr Asn Val Phe Tyr Gly Phe Gly Arg Thr Tyr Ser Leu  
 915 920 925  
 Arg Leu Lys Val Asn Phe  
 930

<210> 7680  
 <211> 84  
 <212> PRT  
 <213> B.fragilis

<400> 7680  
 Ala Ser Phe Gly Ser Cys Arg Leu Leu Tyr Met Cys Glu Leu Phe Gly  
 1 5 10 15  
 Ala Val Cys Lys Leu Val Cys Met Ala Leu Gly Thr Pro Phe Phe Leu  
 20 25 30  
 Cys Lys Val Phe Ile Val Trp Leu Ala Tyr Cys Ile Phe Val Ser Cys  
 35 40 45  
 Arg Leu Asn Tyr Trp Leu Gln Tyr Ser Asn Tyr Leu Phe Ile Leu Leu  
 50 55 60  
 Trp Gly Ser Cys Asp Lys Tyr Arg Ser Tyr Asn Ser Val Gly Ser Ile  
 65 70 75 80  
 Lys Leu Ser Phe

<210> 7681  
 <211> 72  
 <212> PRT  
 <213> B.fragilis

<400> 7681  
 Gly Ala Ile Gly Thr Leu Arg Lys Lys Ala Asn Leu Ser Thr Thr Glu  
 1 5 10 15  
 Ala Thr Glu Met Met Glu Ile Asp Arg Ser Leu Leu Ser Lys Pro Glu  
 20 25 30  
 His Gly Lys Tyr Val Ser Ile Asp Lys Leu Ala Glu Ile Ile Thr Tyr  
 35 40 45

Asn Ile Ser Phe Ile Arg Gly Asn Ser Lys Gly Arg Ile Ser Gln Gln  
 50 55 60  
 Glu Ile Leu Asn Glu Ile Thr Thr  
 65 70

<210> 7682

<211> 495

<212> PRT

<213> B.fragilis

<400> 7682

Ile Lys Asn Gly Tyr Ala Met Ile Glu Phe Ile Asp Pro Asn Ser Asn  
 1 5 10 15  
 Lys Leu Val Ser Ser Gly Pro Thr Met Ala Arg Lys Ala Tyr Tyr Ile  
 20 25 30  
 His Gly Thr Thr Ser Asp Asn Asp Arg Trp Ser Asn Tyr Pro Ser Thr  
 35 40 45  
 Val Gln Gln Leu Asn Arg Ile Ala Phe Gly Ile Gly Val Asp Lys Asn  
 50 55 60  
 Asp Thr Glu Gly Ile Asn Asp Met Gly Ser Glu Lys Phe Lys Glu Ala  
 65 70 75 80  
 Cys Cys Asp Phe Ser Phe Glu Trp Gly Asn Asn Gly Ile Leu Lys Ala  
 85 90 95  
 Gly Asn Asn Trp Phe Leu Asn Thr Val Glu Asp Arg Arg Ile Ala Ser  
 100 105 110  
 Glu Lys Leu Ile Glu His Ile Asn Gly Asn Ile Gly Lys Cys Glu Glu  
 115 120 125  
 Val Val Leu Ile Gly His Ser His Gly Gly Asn Val Ala Ile Gln Ala  
 130 135 140  
 Ala Asp Lys Ile Phe Ser Lys Ile Pro Ala Val Lys Arg Val Phe Val  
 145 150 155 160  
 Leu Thr Ile Gly Thr Pro Ala Phe Asn Arg Leu Phe Ile Thr Ser Tyr  
 165 170 175  
 Ile Asn Asn Lys Asn Leu Ile Thr Phe Asn Glu Lys Val Ser Glu Lys  
 180 185 190  
 Ile Leu Tyr Leu Gly Lys Asp Tyr Val Val Pro Val Ile Lys Leu Gly  
 195 200 205  
 Arg Lys Phe Trp Gly Pro Leu Gly Ile Phe Leu Tyr Ile Asn Cys Glu  
 210 215 220  
 Asn Pro Ala Thr Trp Lys Asn Lys Asp Lys Ile Thr His Ile Ala Leu  
 225 230 235 240  
 Trp Asn Lys Lys Asp His Val Asp Asp Met Ala Trp Val Leu Asp Arg  
 245 250 255  
 Asn Lys Tyr Phe Pro Tyr His Gly Met Thr Asn Asn Ser Ala Tyr Phe  
 260 265 270  
 Thr Asn Ser Ile Thr Asp Asn Val Glu Phe Asp Phe Ala Pro Ala Asp  
 275 280 285  
 Ile Arg Asp Tyr Tyr Lys Arg Glu Ile Lys Pro Phe Ala Glu Trp Leu  
 290 295 300  
 Ala Asn Leu Asp Tyr Leu Arg Phe Cys Leu Val Asp Leu Arg Leu Lys  
 305 310 315 320  
 Gly Tyr Asp Leu Pro Lys Met Pro Thr Leu Leu Thr Tyr Lys Glu Tyr  
 325 330 335  
 Ile Val Arg Arg Lys Lys Met Glu Ala Ser Lys Leu Glu Glu Lys Lys  
 340 345 350  
 Tyr Val Asn Glu Arg Asp Ala Leu Arg Val Asp Ile Pro Lys Pro Lys  
 355 360 365  
 Pro Ile Met Met Cys Ala Ser Thr Arg Leu Arg Glu Glu Ala Asn Asp  
 370 375 380

Leu Gln Glu Leu Phe Lys Ser Thr Asn Gly Phe Tyr Gln Phe Met Thr  
 385 390 395 400  
 Asp Ile Asp Glu Ala Lys Lys Asp Arg Ser Lys Val Val Asp Thr Gln  
 405 410 415  
 Met Val Ile Asp Ile Tyr Lys Gln Lys His Pro Glu Ile Gln Ala Ile  
 420 425 430  
 Glu Glu Ile Lys Gln Glu Met Tyr Arg Glu Thr Glu Phe Leu Glu Lys  
 435 440 445  
 Ala Met Ala Ile Tyr Leu Leu Asp Asn Thr Ser Phe Gly Glu His Gly  
 450 455 460  
 Phe Asp Leu Ala Asn Pro Lys Leu Ile Glu Lys Ala Ile Asn Asp Gly  
 465 470 475 480  
 Arg Ile Lys Pro Phe Pro Asn Ala Arg Asn Ile Asn Thr Glu Phe  
 485 490 495

&lt;210&gt; 7683

&lt;211&gt; 262

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7683

Tyr Arg Ile Leu Ile Asn Met Lys Asn Ile Ile Leu Ile Ile Leu Val  
 1 5 10 15  
 Leu Leu Ser Ser Cys Gly Phe Ser Gln Arg Gln Asn Asn Trp Arg Asp  
 20 25 30  
 Gly His Val Glu Leu Asp Ser Ile Pro Leu Thr Ala Tyr Glu Tyr Lys  
 35 40 45  
 Glu Arg Gly Lys Arg Lys Ser Ala Asn Gly Asp Lys Gln Gly Ala Ile  
 50 55 60  
 Asp Asp Tyr Thr Arg Ala Ile Met Val Glu Pro Thr Tyr Asp Thr Ala  
 65 70 75 80  
 Tyr His Asn Arg Gly Val Val Arg Ala Asp Ile Gly Tyr Tyr Lys Asp  
 85 90 95  
 Ala Ile Leu Asp Tyr Thr Lys Ala Ile Glu Ile Asn Pro His Phe Ala  
 100 105 110  
 Ala Ser Tyr Phe Ser Arg Ala Asn Ala Lys Val Asp Leu Arg Asp Asn  
 115 120 125  
 Lys Gly Ala Leu Ser Asp Tyr Ser Lys Ala Ile Glu Leu Asn Pro Arg  
 130 135 140  
 Phe Ile Asp Pro Tyr Val Asn Arg Gly Val Leu Lys Ser Glu Met Gly  
 145 150 155 160  
 Asp Tyr Glu Gly Glu Ile Ala Asp Tyr His Leu Ala Ile Lys His Cys  
 165 170 175  
 Glu Pro Ser Val Asn Leu Tyr Asn Asn Leu Gly Arg Ala Leu Tyr Ala  
 180 185 190  
 Leu Glu Arg Phe Lys Glu Ser Ala Glu Ala Tyr Gly Glu Gly Ile Lys  
 195 200 205  
 Tyr Phe Pro Glu Asp Tyr Arg Leu Tyr Tyr Gly Arg Gly Leu Ala Arg  
 210 215 220  
 Lys Arg Thr Gly Asp Lys Lys Gly Ala Cys Glu Asp Trp Met Lys Ser  
 225 230 235 240  
 Ser Glu Leu Gly Cys Val Glu Ala Asn Leu Leu Leu Pro Leu Cys Lys  
 245 250 255  
 Glu Cys Asp Thr Lys Lys  
 260

&lt;210&gt; 7684

&lt;211&gt; 60

&lt;212&gt; PRT

[illegible]

Arg	Phe	Ser	Ile	Lys	Phe	Ile	Phe	Ser	Lys	Ile	Ser	Ser	Arg	Tyr	Pro
1				5					10					15	
Tyr	Ser	Glu	Glu	Tyr	Lys	Lys	Val	Gly	Ala	Ala	Arg	Lys	Gln	Asn	Leu
			20					25					30		
Ser	Asn	Thr	Met	Leu	Leu	Thr	Asp	Phe	Gln	Asn	Phe	Leu	Tyr	Ile	Ser
		35					40					45			
Tyr	Tyr	Ile	Ala	Leu	Pro	Asp	Asn	Lys	Gly	Ser	Arg				
	50					55					60				

<211> 771

<213> B.fragilis

Tyr	Ser	Asn	Met	Lys	Tyr	Met	Gly	Asn	Ser	Leu	Asn	Lys	Asn	Lys	Glu
1				5				10						15	
Trp	Ser	Val	Thr	Asn	Ser	Pro	Ile	Ile	Lys	Leu	Lys	Val	Asp	Lys	Lys
			20					25					30		
Glu	Pro	Lys	Phe	Asn	Ala	Thr	Glu	Ala	Val	Lys	Ile	Arg	Ile	Thr	Ala
		35					40					45			
Glu	Cys	His	Asn	Val	Thr	Ile	Pro	Lys	Asn	Gly	Leu	Glu	Tyr	Glu	Trp
	50					55					60				
Ser	Tyr	Val	Asp	Ser	Thr	Gly	Phe	Met	Lys	Ser	Phe	Thr	Thr	Lys	Lys
65					70					75					80
Gly	Val	Val	Met	Leu	His	Cys	Pro	Asn	Phe	Cys	Gly	Arg	Val	Met	
				85					90				95		
Thr	Ile	Lys	Val	Lys	Val	Asn	Leu	Glu	Ile	Ser	Lys	Phe	Asp	Glu	Lys
			100					105					110		
Ile	Lys	Phe	Ser	Ser	Phe	Asp	Phe	Gly	Lys	Phe	Asp	Thr	Leu	Glu	Asp
		115					120					125			
Thr	Ile	Glu	Ile	Lys	Pro	Gln	Cys	Asn	Lys	Lys	Leu	Ser	Asp	Asn	Ala
	130					135					140				
Glu	Trp	Leu	Pro	Asp	Glu	Val	Glu	Met	Pro	Asn	Cys	Val	Gln	Ser	Ser
145					150					155					160
Val	Thr	Leu	Tyr	Gly	Tyr	Asn	Gly	Ser	Glu	Met	Gly	Leu	Val	Arg	Met
				165					170					175	
Ile	Lys	Glu	Lys	Gly	Lys	Ile	Ile	Trp	Lys	Gly	Glu	Asp	Lys	Val	Met
			180					185					190		
Val	Arg	Asp	Asn	Val	Val	Ser	Ala	Leu	Phe	Asn	Arg	Asn	His	Cys	Thr
		195					200					205			
Ser	Ser	Thr	Ala	Asp	Asp	Ser	Ile	Tyr	Thr	Leu	Gln	Phe	Gln	Leu	Thr
		210				215					220				
Asp	Ala	Arg	Asn	Gly	Ser	Leu	Leu	Lys	Ser	Tyr	Ser	Arg	Asp	Tyr	Thr
225					230					235					240
Ile	Lys	Gly	Arg	Glu	Ala	Ile	Lys	Pro	Leu	Ala	Gly	Cys	Pro	Ile	Gln
				245					250					255	
Pro	Val	Val	Val	Gly	Asp	Ile	Thr	Ile	Ala	Glu	Asn	Asn	Phe	Lys	Pro
			260					265					270		
Cys	Lys	Tyr	Thr	Gln	Ile	Asp	Val	Glu	Tyr	Thr	Lys	Asp	Lys	Glu	Gly
		275					280					285			
Lys	Glu	Lys	Gln	Lys	Met	Thr	Val	Phe	Lys	Glu	Gly	Leu	Gln	Ser	Thr
	290					295					300				
Asn	Thr	Val	Asn	Leu	Ile	Gly	Gly	Glu	Arg	Lys	Ile	Thr	Val	Thr	Leu
305					310					315					320
Leu	Glu	Tyr	Thr	Pro	Lys	Lys	Cys	Thr	Leu	Lys	Glu	Asn	Ser	His	Lys



325 330 335  
 Lys Lys Glu Glu Val Pro Phe Met Leu Tyr Gly Glu Asn Lys Ser Lys  
 340 345 350  
 Leu Pro Ile Ser Val Ser Gly Lys Thr Gly Lys Ile Glu Asn Ile Lys  
 355 360 365  
 Ile Lys Tyr Asn Tyr Gly Ile Ile Asn Ala Ile Lys Thr Leu Trp Leu  
 370 375 380  
 Pro Met Ser Gly Ile Val Gln Thr Ser Lys Leu Tyr Thr Ser Tyr Ala  
 385 390 395 400  
 Asn Cys Arg His Phe Asn Asp Val Ile Phe Asn Met Tyr Pro Asp Thr  
 405 410 415  
 Lys Trp Glu Ala Phe Val Glu Leu Ser Ser Ser Lys Pro Arg Leu Tyr  
 420 425 430  
 Ser His Thr Asn Met Pro Ala Glu Tyr Ser Ile Phe Glu Arg His Gln  
 435 440 445  
 Lys Lys Ala Leu Ser Ala Ala Lys Glu Asp Lys Asp Ile Gly Leu Ser  
 450 455 460  
 Phe Ser Leu Met Ala Thr Tyr Asp Asp Asp Ile Glu Ile Lys Leu Thr  
 465 470 475 480  
 Ala Asp Ile Glu Lys Ser Val Lys Thr Val Ser His Val Leu Lys Thr  
 485 490 495  
 Ile Arg Asp Ala Leu Asp Val Leu Ser Phe Lys Lys Ser Val Asp Asp  
 500 505 510  
 Asn Lys Asp Lys Leu Lys Ala Arg Asn Val Leu Pro Lys Ser Ser Lys  
 515 520 525  
 Leu Pro Val Phe Ile Glu Ile Ser Ser Pro Val Leu Lys Ile Gly Gly  
 530 535 540  
 Gly Trp Gln Tyr Asp Leu Asn Ser Glu Asn Gln Leu Ile Arg Lys Gly  
 545 550 555 560  
 Glu Ile Ala Ile Ala Ala Ser Pro Leu Ile Glu Ala Lys Gly Gly Ile  
 565 570 575  
 Asp Leu Ile Ala Cys Ser Thr Phe Ile Pro Val Val Gly Gln Ile Ile  
 580 585 590  
 Lys Ala Ile Leu Lys Leu Asn Asp Phe Ala Glu Trp Ala Thr Lys Tyr  
 595 600 605  
 Leu Ser Asn Asp Lys Ala Lys Tyr Glu Gly Leu Ile Trp Phe Asn Ile  
 610 615 620  
 Tyr Leu Lys Gly Ser Leu Ser Ile Val Gly Thr Val Lys Leu Ser Glu  
 625 630 635 640  
 Glu Asn Arg Thr Val Lys Phe Glu Ser Pro Val Asn Ile Val Phe Val  
 645 650 655  
 Val Glu Leu Gly Ile Ser Ala Glu Val Lys Val Glu Thr Val Thr Ile  
 660 665 670  
 Thr Gly Asn Asn Thr Tyr Thr Val Arg Ala Gly Ala Ser Gly Glu Ala  
 675 680 685  
 Ser Thr Gly Leu Thr Phe Lys Pro Ser Met Gly Tyr Ser Thr Asp Glu  
 690 695 700  
 Gly Ile Tyr Leu Gly Phe Lys Val Ser Phe Asp Gly Ile Ile Leu Thr  
 705 710 715 720  
 Val Ser Gly Glu Ala Lys Phe Glu Gln Lys Lys Lys Gly Lys Lys Thr  
 725 730 735  
 Leu Ser Ile Gly Pro Glu Ile Asn Gly Glu Pro Leu Pro Pro Leu Ile  
 740 745 750  
 Ala Pro Cys Ser Ile Trp Lys Gly Glu Val Tyr Pro Phe Arg Glu Thr  
 755 760 765  
 Asn Lys Lys  
 770

<211> 321  
 <212> PRT  
 <213> B.fragilis

<400> 7686

Trp Ile Asp Met Glu His Arg Leu Pro Lys Glu Ile Lys Gly Leu Leu  
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 20 25 30  
 Leu Leu Ala Glu Ala Gly Phe Asp Thr Ala Gln Ile Met Met Val Arg  
 35 40 45  
 Asp Gly Asn Asn Leu Ser Asn Val Ser Lys Asp Ile Arg Ser Val Lys  
 50 55 60  
 Tyr Arg Asn His Val Gly Ile Ala Glu Gly Thr Tyr Ile Glu Leu Lys  
 65 70 75 80  
 Thr Asn Arg Arg Gly Ile Tyr Asp Ser Leu Pro Glu Gly Leu Phe His  
 85 90 95  
 Glu Ala Leu Phe Pro Gly Lys Val Lys Asp Leu Gly Leu Ile Leu Glu  
 100 105 110  
 Glu Met Gln Gln His Ser Asn Glu Glu Phe Phe Ile Arg Arg Phe Phe  
 115 120 125  
 Ser Leu Leu Glu Ser Glu Val Asp Arg Glu Gly Ile Gln Ala Gln Leu  
 130 135 140  
 Leu Glu Leu Arg Tyr Asp Lys Lys Asn Lys Tyr Ser Asp Tyr Ala Lys  
 145 150 155 160  
 Leu Phe Ala Ala Cys Trp Pro Val Ile His Ile Leu Ser Gly Gln Gly  
 165 170 175  
 Ala Leu Leu Phe Ile Lys Phe Met Pro His Ile His Ser Ile Arg Gly  
 180 185 190  
 Arg Leu Glu Glu Val Ser Asp Ala Leu Ser Gln Ile Leu Glu Ala Pro  
 195 200 205  
 Val Lys Val Arg Pro Lys Met Val Gln Arg Thr Ile Arg Ala Gln Asn  
 210 215 220  
 Pro Asn Arg Leu Gly Asn Met Arg Leu Gly Ala Asn Ser Val Asn Val  
 225 230 235 240  
 Gly Val Leu Asn Ser Ala Gly Ala Asp Leu His Ile His Ile Ser Asp  
 245 250 255  
 Leu Pro Thr Arg Glu Val Glu Arg Phe Leu Pro Gly Asn Arg Ser Arg  
 260 265 270  
 Lys Ala Leu Glu Met Leu Ala Asp Ile Phe Leu Gly Ala Trp Gln Glu  
 275 280 285  
 Phe Asp Val Thr Val Ser Val Ser Pro Asp Glu Arg Lys Thr Tyr Leu  
 290 295 300  
 Lys Pro Thr Gly Asp Ala Ser Pro Cys Tyr Leu Gly Ile Asn Thr Tyr  
 305 310 315 320  
 Leu

<210> 7687  
 <211> 307  
 <212> PRT  
 <213> B.fragilis

<400> 7687

Gln Pro Asp Ile Met Asn Gly Leu Gln Ile Ile Lys Thr Leu Ala Leu  
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 Lys Ile Arg Tyr Ala Ser Ile Val Glu Trp Tyr Asn Phe Trp Ser Ile  
 20 25 30  
 Val Leu Gln His His Gln Asn Ile Val Pro Thr Val Ala Ser Ile Asp

35 40 45  
 Glu Thr Ile Arg His Ile Thr Glu Gly Asn Arg Ser Ile Ser Arg Phe  
 50 55 60  
 Gly Asp Gly Glu Met Leu Leu Thr Ser Pro Ser Lys Ser Ile Gly Phe  
 65 70 75 80  
 Gln Glu Gly Ser Pro Leu Leu Ala Lys Arg Leu Arg Glu Val Leu Val  
 85 90 95  
 Ser His Glu Glu Gly His Leu Val Ala Ile Pro Asp Val Phe Ser Gly  
 100 105 110  
 Leu Asn Arg Tyr Arg Arg Lys Cys Arg Arg Phe Gln Arg Thr His Phe  
 115 120 125  
 Phe Ile Tyr Gly Lys Trp Trp Asp Gln Leu Leu Ile Pro Gly Arg Lys  
 130 135 140  
 Tyr Glu Asn Ala Phe Leu Ser Arg Pro Tyr Met Asp Tyr Thr Ser Lys  
 145 150 155 160  
 Glu His Cys Ala Arg Trp Phe Arg Glu Leu Lys Thr Ile Trp Glu Gly  
 165 170 175  
 Arg Asp Ile Val Phe Ile Glu Gly Ala Met Ser Arg Leu Gly Val Gly  
 180 185 190  
 Asn Asp Leu Phe Asp Asn Ala Gly Ser Ile Arg Arg Ile Leu Cys Pro  
 195 200 205  
 Pro Arg Asn Ala Phe Glu Arg Tyr Asp Arg Ile Leu Asn Glu Ala Leu  
 210 215 220  
 Lys Val Glu Lys Glu Val Leu Phe Leu Ile Ala Leu Gly Pro Thr Ala  
 225 230 235 240  
 Thr Val Leu Ala Tyr Asp Leu His Asn Ala Gly Tyr Gln Ala Val Asp  
 245 250 255  
 Ile Gly His Ile Asp Val Glu Tyr Glu Trp Trp Arg Met Lys Ala Arg  
 260 265 270  
 Arg Lys Val Lys Leu Glu Lys Lys Tyr Val Asn Glu Ala Phe Gly Asn  
 275 280 285  
 Lys Arg Val Thr Asp Ala Gly Glu Gly Tyr Arg Lys Glu Ile Ile Ala  
 290 295 300  
 Gln Ile Ser  
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&lt;210&gt; 7688

&lt;211&gt; 158

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7688

Tyr Met Asp Ile Ala Lys Ile Ile Tyr Val Ser Leu Thr Met Leu Thr  
 1 5 10 15  
 Ala Trp Val Phe Met Ser Ile Ala Phe Pro Ile Asp Thr Tyr Lys His  
 20 25 30  
 Leu Leu Gly Val Val Gly Ser Tyr Ile Cys Val Ser Cys Ser Ala Leu  
 35 40 45  
 Phe Ala Ser Trp Phe Ala Trp His Trp Val His Pro Phe Ser Tyr Val  
 50 55 60  
 Lys Tyr Leu Leu Cys Gly Leu Leu Thr Ala Phe Leu Phe His Ala Gly  
 65 70 75 80  
 Leu Thr Ile Gly Cys Ser Ile Pro Ile Ile Phe Leu Ser Cys Cys Gly  
 85 90 95  
 Val His Val Ile Ser Thr Glu Ala Ile Thr Leu Trp Glu Val Leu Ser  
 100 105 110  
 Tyr Leu Phe Ser Ile Phe Ile Met Ser Phe Tyr Phe Val Gly Ile Phe  
 115 120 125  
 Thr Phe Gly Gln Cys Leu Leu Thr Ala Ser Ile Thr Lys Ile Ile Ile

130 135 140  
 Trp Lys Leu Asn Ile Ser Asn Asn Ile Thr Asn Asn Ala Arg  
 145 150 155

<210> 7689  
 <211> 106  
 <212> PRT  
 <213> B.fragilis

<400> 7689  
 Ile Thr Ser Ile Ser Ile Thr Ile Ser Ile Pro Lys Lys Leu Ser Ser  
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 Ile Thr Pro Tyr Ile Pro Asn Ser Arg Pro Lys Pro Lys Pro Pro Lys  
 20 25 30  
 Lys Asn Val Ile Thr Ile Ser Lys Arg Leu Thr Ala Val Asn Asp Ser  
 35 40 45  
 Ile Asp Trp Thr Val Leu Phe Ile Ala Gln Leu Leu Val Met Val Gln  
 50 55 60  
 Gln Gly Thr Ala Cys Arg Tyr Leu Ala Leu Leu Val Ile Leu Leu Leu  
 65 70 75 80  
 Ile Phe Asn Phe His Ile Ile Ile Phe Val Met Leu Ala Val Ser Lys  
 85 90 95  
 His Cys Pro Lys Val Lys Ile Pro Thr Lys  
 100 105

<210> 7690  
 <211> 64  
 <212> PRT  
 <213> B.fragilis

<400> 7690  
 Asp Asn Thr Met Pro Tyr Ile Thr Ile Glu Gly Gly Ser Leu Thr Arg  
 1 5 10 15  
 Glu Gln Lys Ser Glu Leu Ile Arg Lys Val Thr Glu Val Ala Ser Glu  
 20 25 30  
 Val Met Gln Ile Pro Met Glu Phe Phe Leu Cys Thr Val Lys Glu Leu  
 35 40 45  
 Pro Asp Glu Asn Ile Gly Ile Gly Gly Arg Thr Ile Asp Leu Ile Lys  
 50 55 60

<210> 7691  
 <211> 287  
 <212> PRT  
 <213> B.fragilis

<400> 7691  
 Gln Met Lys Ile Met Glu Ile Lys Tyr Ile Phe Cys Ile Val Phe Cys  
 1 5 10 15  
 Phe Trp Ala Met Lys Thr Thr Met Ala Gln Ser Asp Asn Asn Leu Phe  
 20 25 30  
 Ala Leu Glu Lys Gln Leu Cys Phe Ile Gln Asp Thr Leu Ser Ile Leu  
 35 40 45  
 Arg Gln Asn Tyr Pro Tyr Thr Asp Asp Asn Tyr Cys Asp Ser Leu Gln  
 50 55 60  
 His Arg Phe Ser Ile Leu Leu Glu Glu Leu Cys Ala Val Asp Lys Glu  
 65 70 75 80  
 Met Lys Tyr Asp Phe Ile Glu Leu Arg Lys Lys Glu Arg Gln Phe Thr  
 85 90 95  
 Met Ala Val Ser Val Asp Glu Asp Met Arg Val Phe Ser Arg Asn Thr

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100	105	110
Tyr Phe Gly Gly Ser Met Pro Leu Phe Ala Ser Tyr Ile Gln Tyr Lys		
115	120	125
Asp Lys Glu His Leu Tyr Phe Phe Asp Ile Asn Glu Asp Asn Asp Met		
130	135	140
Gly Ile Cys Tyr Asp Thr Ile Tyr Ser Ile Gln Ala Leu Asn Lys Arg		
145	150	155
Tyr Tyr Leu Leu Ser Gly Thr Ser Gln Ile Ala Ala Ala Tyr Pro Leu		
165	170	175
Val Val Met Lys Ala Val Ser Cys Ala Asn Gly Glu Leu Lys Lys Glu		
180	185	190
Ile Ile Phe Val Ser Gly Asn Gln Thr Asp Tyr Leu Ser Ile Ser		
195	200	205
Tyr Arg Tyr Val Lys Asp Asn Ile Asp Thr Arg Leu Phe Ile Ser Gly		
210	215	220
Asn Leu Thr Phe Pro Arg Ile Val Tyr Val Glu Thr Gln Glu Glu Ile		
225	230	235
Leu Lys Pro Val Thr Val Arg Asp Lys Asp Asp Ile Lys Tyr Ile Gly		
245	250	255
Gly Glu Ile Asp Val Tyr Lys Leu Glu Arg Asn Lys Asn Glu Ile Lys		
260	265	270
Phe Ile Asn Asn Asn Glu Ser Tyr His Leu Asn Asp Asp Pro Phe		
275	280	285

<210> 7692  
 <211> 65  
 <212> PRT  
 <213> B.fragilis

<400> 7692  
 Ala Glu Arg Ile Glu Tyr Gly Tyr Gln Gln Asp Ala Asp His Gln Gly  
 1 5 10 15  
 Arg Asp Gln Leu Asp Gly Glu Met Ala Gln Ala Ala Val Gln Arg His  
 20 25 30  
 Pro Val His His Pro Val Ala Leu Ser Glu Val Asp Gly Lys Arg Glu  
 35 40 45  
 Arg Asp Ala Cys Gly Tyr Ser Phe Glu Arg Ala Glu Pro Lys Asn Ala  
 50 55 60  
 Gln  
 65

<210> 7693  
 <211> 112  
 <212> PRT  
 <213> B.fragilis

<220>  
 <221> UNSURE  
 <222> (104), (105), (107), (110), (111)  
 <223> Identity of amino acid sequences at the above locations are unknown.

<400> 7693  
 Arg Gln Ser Val Leu Pro Arg Asn Lys His Leu Phe Ile Arg Ile Met  
 1 5 10 15  
 Lys Ala Lys Asn Ser Glu Lys Ile Ile Arg Gly Tyr Leu Glu Phe Ala  
 20 25 30  
 Gly Gly Leu Leu Ile Ser Thr Ala Leu Ser Met Ala Leu Leu Thr Gly  
 35 40 45  
 Phe Ile His Thr Asn Gly Ser Glu Tyr Lys Leu Met Glu Ser Lys Thr

50 55 60  
 Gln Glu Tyr Asp Lys Ile Tyr Ala Arg Gln Ile Ala Leu Val Asp Lys  
 65 70 75 80  
 Val Asp Ser Leu Tyr Asn Tyr Leu Val Leu Met Val Phe Thr Thr Gly  
 85 90 95  
 Leu Glu Arg Ala Ala Ala Ile Xaa Xaa Ser Xaa Ser Ile Xaa Xaa Pro  
 100 105 110

<210> 7694  
 <211> 104  
 <212> PRT  
 <213> B.fragilis

<400> 7694  
 Phe Val Arg Phe Arg Ile Val Gly Arg Thr Ile Glu Phe Gly Arg Asn  
 1 5 10 15  
 Ser Val His Gln Gln Ile Gly Tyr Ala Lys Cys Gln Arg Asn Glu Gln  
 20 25 30  
 Asp Pro Val Asp Gln Ala Gln Met Ser Ile Ile Ser Leu Asn Val Gly  
 35 40 45  
 Tyr Gly Ser Ile Tyr Leu Cys Lys Ser Val Gln Leu Trp Phe Thr Thr  
 50 55 60  
 Asp Tyr Thr Glu Asp His Phe Gly Arg Val Leu Gln Asn Pro Ile Glu  
 65 70 75 80  
 Ser Gln Arg Ile Pro Gln Asp Phe Thr Phe Ser Phe Met Asp Ile Pro  
 85 90 95  
 Gln Glu Asn Asp Ser Ser Leu Cys  
 100

<210> 7695  
 <211> 1248  
 <212> PRT  
 <213> B.fragilis

<400> 7695  
 Lys Asn Gln Val Gln Asn Pro Lys Val Met Thr Ser Leu Lys His Gln  
 1 5 10 15  
 Leu Phe Ser Gly Val Phe Tyr Thr Ala Leu Ala Lys Tyr Ser Gly Ile  
 20 25 30  
 Gly Val Ser Leu Val Val Ala Gly Val Leu Ala Arg Leu Ile Ser Pro  
 35 40 45  
 Asp Asp Phe Gly Val Met Ala Val Ala Thr Val Ile Ile Ala Phe Phe  
 50 55 60  
 Asn Leu Phe Thr Asp Val Gly Leu Ser Pro Ala Ile Ile Gln His Lys  
 65 70 75 80  
 Thr Leu Thr Gly Glu Asn Leu Ser Gly Leu Phe Ser Phe Thr Val Trp  
 85 90 95  
 Thr Gly Ile Gly Leu Ala Leu Leu Phe Ala Ala Ala Ser Trp Pro Ile  
 100 105 110  
 Ala Ala Tyr Tyr Asp Arg Glu Ile Leu Arg Pro Leu Cys Gln Leu Leu  
 115 120 125  
 Ala Val Asn Leu Phe Phe Ala Ser Ala Thr Ile Val Pro Asn Ala Leu  
 130 135 140  
 Phe Tyr Arg Asn Lys Glu Phe Lys Phe Ile Ala Leu Arg Ser Phe Val  
 145 150 155 160  
 Ile Gln Ile Ala Thr Gly Thr Ala Ala Val Val Ala Ala Leu Cys Gly  
 165 170 175  
 Ala Gly Leu Tyr Ala Leu Ile Ile Gly Pro Ile Leu Ser Gly Ile Leu  
 180 185 190

Ile	Phe	Ala	Val	Ser	Ile	Arg	His	Tyr	Pro	Gln	Arg	Leu	Lys	Phe	Thr
	195						200					205			
Leu	Gly	Leu	Asp	Val	Leu	Arg	Arg	Ile	Phe	Ser	Tyr	Ser	Ala	Tyr	Gln
	210					215					220				
Phe	Leu	Phe	Asn	Ile	Ile	Asn	Tyr	Phe	Ser	Arg	Asn	Leu	Asp	Lys	Leu
225				230						235					240
Leu	Ile	Gly	Lys	Tyr	Met	Gly	Met	Ser	Pro	Leu	Gly	Tyr	Tyr	Glu	Lys
				245					250					255	
Ser	Tyr	Arg	Leu	Met	Met	Leu	Pro	Leu	Gln	Asn	Ile	Thr	Gln	Val	Ile
			260					265					270		
Thr	Pro	Val	Met	His	Pro	Ile	Phe	Ser	Asp	Tyr	Gln	Asp	Asp	Leu	Glu
		275					280					285			
Arg	Leu	Ala	Ser	Gly	Tyr	Glu	Arg	Ile	Val	Arg	Phe	Leu	Ala	Phe	Ile
	290					295					300				
Gly	Leu	Pro	Leu	Ser	Val	Leu	Leu	Tyr	Phe	Thr	Ala	Gly	Glu	Val	Thr
305				310						315					320
Leu	Ile	Ile	Phe	Gly	Asp	Gln	Trp	Thr	Pro	Ser	Ile	Pro	Val	Phe	Arg
				325					330					335	
Ile	Leu	Thr	Leu	Ser	Val	Gly	Val	Gln	Ile	Ile	Leu	Ser	Ser	Ser	Gly
			340					345					350		
Ser	Ile	Phe	Gln	Ala	Ala	Gly	Asp	Thr	Lys	Asn	Leu	Phe	Met	Cys	Gly
		355					360					365			
Leu	Phe	Ser	Ser	Ile	Leu	Asn	Val	Thr	Gly	Ile	Leu	Leu	Gly	Ile	Phe
	370					375					380				
Trp	Phe	Gly	Thr	Leu	Glu	Ala	Val	Ala	Thr	Cys	Ile	Thr	Leu	Thr	Phe
385				390						395					400
Thr	Val	Asn	Phe	Ala	Gln	Cys	Tyr	Trp	Met	Met	Tyr	Arg	Met	Thr	Leu
				405					410					415	
His	Arg	Ser	Leu	Arg	His	Phe	Ala	Ile	Gln	Leu	Ile	Ser	Pro	Leu	Met
			420					425					430		
Val	Ser	Ile	Leu	Leu	Ile	Ala	Val	Leu	Tyr	Pro	Leu	Ser	Leu	Met	Thr
		435					440					445			
Glu	Gly	Gly	Asn	Ile	Phe	Leu	Thr	Leu	Ile	Val	Lys	Ser	Ile	Ile	Phe
	450					455					460				
Phe	Cys	Ile	Phe	Gly	Cys	Tyr	Ile	Gln	Leu	Thr	Gly	Glu	Tyr	Asp	Ile
465				470						475					480
Thr	Gly	Lys	Gly	Lys	Lys	His	His	Lys	Gln	Lys	Gln	Thr	Met	Lys	Ala
				485					490					495	
Leu	Phe	Leu	Ile	Phe	His	Gly	Phe	Glu	Glu	Ala	Asn	Gly	Ile	Ser	Lys
			500					505					510		
Lys	Ile	Arg	Tyr	Gln	Val	Lys	Ala	Leu	Lys	Glu	Cys	Gly	Met	Asp	Val
		515					520					525			
His	Thr	Cys	Tyr	Leu	Asn	Glu	Glu	Asn	Gly	His	Lys	Cys	Arg	Met	Ile
	530					535					540				
Asp	Asn	His	Thr	Leu											





Ser Asn Ile Val Asp Lys Tyr Cys Glu Ser Ser Ile Phe Ala Leu Ser  
 1140 1145 1150  
 Ser Arg Tyr Glu Gly Phe Gly Met Val Leu Val Glu Ala Met Val Cys  
 1155 1160 1165  
 Gly Val Pro Pro Val Ser Phe Ala Cys Pro Cys Gly Pro Arg Asp Ile  
 1170 1175 1180  
 Ile Asp Asp Gly Asn Asp Gly Leu Leu Val Pro Lys Glu Asn Ile Asn  
 1185 1190 1195 1200  
 Lys Leu Ala Glu Lys Ile Gly Tyr Leu Ile Ser His Glu Asn Ile Arg  
 1205 1210 1215  
 Lys Glu Met Gly Gln Arg Ala Arg Ile His Val Glu Arg Phe Lys Ile  
 1220 1225 1230  
 Asp His Ile Ala Ser Gln Trp Lys Glu Leu Phe Asn Ser Leu Ile Ser  
 1235 1240 1245

<210> 7696

<211> 70

<212> PRT

<213> B.fragilis

<400> 7696

Tyr Glu Glu Val Asn Asn Ala Ile Glu Lys Ile Gly Gln Glu Met Tyr  
 1 5 10 15  
 Arg Glu Thr Glu Phe Leu Glu Lys Ala Met Ala Ile Tyr Leu Leu Asp  
 20 25 30  
 Asn Thr Ser Phe Gly Glu His Gly Phe Asp Leu Ala Asn Pro Lys Leu  
 35 40 45  
 Ile Glu Glu Ala Ile Asn Asp Gly Arg Ile Lys Pro Phe Pro Arg Ala  
 50 55 60  
 Thr Arg Lys Thr Lys Asp  
 65 70

<210> 7697

<211> 488

<212> PRT

<213> B.fragilis

<400> 7697

Val Asn Gly Val Ile Leu Met Thr Cys Lys Tyr Asp Arg Ile Met Asn  
 1 5 10 15  
 Ile Lys Thr Leu Leu Ile Met Gly Leu Val Asn Met Phe Gly Leu Gly  
 20 25 30  
 Gly Cys Ala Asn Ala Glu Ile Gly Lys Gln Val Leu Asn Leu Asp Asp  
 35 40 45  
 Leu Asp Tyr Gly Ile Asp Val Val Arg Tyr Tyr Ala Pro Ala Met Glu  
 50 55 60  
 Glu Ser Lys Asp Thr Val Glu Glu His Tyr Tyr Val Asn Arg Asp Thr  
 65 70 75 80  
 Val Lys Phe Tyr Asp Thr Glu Thr Asp Lys Leu Leu Pro Val Leu Ile  
 85 90 95  
 Ala Tyr Arg His Leu Ala Gly Val Val Lys Glu Gln Ala Thr Phe Cys  
 100 105 110  
 Gly His Ser Phe Thr Asn Val Ser Met Ala Thr Met Glu Asp Gly His  
 115 120 125  
 Leu Ile Met Val Gln Cys Glu Val Glu Met Gln Pro Ala Asp Leu Ser  
 130 135 140  
 Gln Leu Leu Ala Ala Val Lys Lys Tyr Gly Glu Pro Tyr Thr Glu  
 145 150 155 160  
 Glu Lys Asp Gln Phe Gly Lys Pro Asp Pro Lys Trp Arg Trp Glu Thr

165 170 175  
 Lys Asp Glu Tyr Ile Gln Leu Asn Ala Lys Asn Met Ser Gly Lys Glu  
 180 185 190  
 Thr Leu Asn Ile Glu Thr Thr Asp Asn Val Glu Glu Pro Val Lys Ile  
 195 200 205  
 Gly Asn Pro Lys Pro Tyr Val Lys Val Ala Leu Tyr Arg Trp Ala Lys  
 210 215 220  
 Lys Tyr His Asp Leu Val Leu Ala Glu Glu Pro Leu Tyr Gly Phe Ser  
 225 230 235 240  
 Pro Leu Asn Lys Glu Ala Glu Thr Arg Trp Asp Asn Asp His Ile Lys  
 245 250 255  
 Ser Ala Lys Phe Tyr Thr Pro Glu Glu Val Lys Pro Phe Phe Ile Thr  
 260 265 270  
 Ala His Tyr Leu Asp Ser Leu Glu His Ser Gly Asp Val Trp Gly Lys  
 275 280 285  
 Ile Glu Ala Ser Phe Tyr Tyr Arg Ile Pro Asn Ser Lys Val Thr Asp  
 290 295 300  
 Glu Thr Gly Ile Thr Asp Ser Val Lys Ile Asn Gln Glu Gly Cys Leu  
 305 310 315 320  
 Pro Cys Trp Ser Phe Gly Gly Leu Asp Arg Asp Phe Lys Asn Gly Leu  
 325 330 335  
 Ser Asn Ala Ala Tyr Ile Ala Arg Gln Met Gln Lys Gly Val Lys Phe  
 340 345 350  
 Thr Glu Ile Met Glu Asp Lys Glu Leu Cys Pro Asp Val Tyr Tyr Tyr  
 355 360 365  
 Gly Glu Ala Glu Trp Trp Lys Lys Lys Val Phe Gly Ile Val Arg  
 370 375 380  
 Phe Glu Arg Asp Glu Lys Asp Asn Met Val Leu Arg Glu Pro Glu Thr  
 385 390 395 400  
 Asp Arg Asp Asp Ile Arg Arg Arg Val Leu Ile Ile Asn Asp Asn Ile  
 405 410 415  
 Lys Glu Glu Leu Arg Lys Ser Gly Leu Asp Leu Glu His Thr Thr Ala  
 420 425 430  
 Arg Leu Met Asn Ala Pro Gly Asp Ile Thr Pro Leu Ala Phe Phe Thr  
 435 440 445  
 Asp Gly Lys Leu Asp Met Phe Met Cys Ile Asp Glu Gly Arg Tyr Ser  
 450 455 460  
 Phe Ser Thr Pro Asn His Glu Trp Glu Ser Asn Lys Ile Tyr Arg Leu  
 465 470 475 480  
 Tyr Asp Tyr Leu Ser Asp Ile Lys  
 485

&lt;210&gt; 7698

&lt;211&gt; 119

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7698

Leu Lys Ser Phe Pro Glu Phe Ser Phe Tyr Ser Ala Ala Val Val Pro  
 1 5 10 15  
 Gln Arg Val Ile Val Tyr His Pro Ala Phe Val Ser Ile Phe Leu Val  
 20 25 30  
 Gln Ile Thr Cys Val His Val His Ser Ala Leu Phe Gln Arg Phe Tyr  
 35 40 45  
 Leu Ile Ala Asp Phe Leu Ala Asp Ala Val Arg Phe Phe Lys Ser Val  
 50 55 60  
 Glu Tyr Lys Lys Gln Cys Phe His Arg Leu Phe Leu Phe Met Met Leu  
 65 70 75 80  
 Phe Ala Leu Ala Ser Asp Val Val Phe Thr Gly Gln Leu Tyr Ile Ala

85 90 95  
 Pro Lys Tyr Thr Glu Lys Tyr Asn Ala Phe Tyr Asn Gln Gly Gln Lys  
 100 105 110  
 Asn Val Ala Ser Phe Cys His  
 115

<210> 7699  
 <211> 130  
 <212> PRT  
 <213> B.fragilis

<400> 7699  
 Asn Met Ala Phe Arg Ala Thr Leu Ser Phe Ala Gly Lys Glu Phe Asp  
 1 5 10 15  
 Val Leu Asp Cys Thr Tyr Ser Leu Lys Arg Asp Val Asp Ser Lys Gly  
 20 25 30  
 Arg Pro Ser Ser Asn Ile Tyr Gly Gly Gln Ile Arg Leu His Val Glu  
 35 40 45  
 Ser Thr Asp Asp Thr Ser Ile Leu Glu Asn Met Thr Asn Gln Phe Lys  
 50 55 60  
 Pro His Ser Gly Ser Ile Val Phe Lys Lys Gly Asp Glu Glu Ala Lys  
 65 70 75 80  
 Met Lys Glu Leu Thr Trp Glu Asn Gly Tyr Ile Thr Glu Phe Thr Glu  
 85 90 95  
 Asn Ile Asp Ile Val Gly Ser Gln Pro Met Thr Ile Thr Phe Val Val  
 100 105 110  
 Ser Ala Gln Val Ile Lys Ile Gly Gly Ala Gln Phe Glu Gln Asn Trp  
 115 120 125  
 Pro Lys  
 130

<210> 7700  
 <211> 611  
 <212> PRT  
 <213> B.fragilis

<400> 7700  
 Asn Ile Lys Leu Lys Arg Met Ala Asn Leu Phe Thr Lys Glu Ser Ile  
 1 5 10 15  
 Lys Ala Arg Met Phe Lys Gln Ala Ala Thr Leu Tyr Asp Ile Arg Asn  
 20 25 30  
 Ile Asp Gly Ile Asp Pro Leu Ile Arg Leu Leu Ile Glu Ala Leu Ser  
 35 40 45  
 Gly Glu Ile Phe Lys Leu Ser Gly Asp Met His Ala Ile Glu Ser Arg  
 50 55 60  
 Leu Leu Glu Lys Val Ala Ser Ala Leu Thr Pro His Thr Ala Leu Val  
 65 70 75 80  
 Ala Lys Pro Ala His Ala Ile Ala Ala Arg Pro Tyr Thr Pro Gln  
 85 90 95  
 Ala Thr Val Ser Pro Thr Asp Leu Phe Ser Tyr Lys Ser Thr Glu Ile  
 100 105 110  
 Val Lys Lys Tyr Lys Met Lys Asn Leu Phe Phe Thr Pro Leu His Glu  
 115 120 125  
 Thr Arg Ile Ile Asn Ala Glu Leu Lys Phe Leu Val Thr Ala Asp Glu  
 130 135 140  
 Phe Cys Thr Ile Thr Pro Glu Gly Glu Arg Asp Ala Thr Ala Arg Phe  
 145 150 155 160  
 Arg Ser Asp Val Pro Val Met Gly Arg Lys Ile Ser Ile Gly Met Lys  
 165 170 175

Ile Gly Asn Asn Val Thr Thr Leu Asn Asp Leu Pro Leu Tyr Ile Asp  
 180 185 190  
 Ile Pro Leu Val Ala Asp Lys Ser Ser Tyr Leu Lys Leu Leu Pro Tyr  
 195 200 205  
 Cys His Cys Thr Ile Ala Gly Ile Pro Val Glu Ile Lys Gly Gly Ile  
 210 215 220  
 Glu Tyr Ala Pro Thr Arg Ser Val Ser Glu Lys Tyr Asp Leu Gly Arg  
 225 230 235 240  
 Leu Ile Thr Glu Glu Ile Thr Ser Lys Tyr Ala Ser His Tyr Leu Thr  
 245 250 255  
 Leu Lys Ala His Gly Leu Lys Val Arg Asp Leu Ser Arg Ser Arg Val  
 260 265 270  
 Pro Glu Glu Ile Ser Phe Leu Leu Pro Ser Asp Phe Ile Ala Glu Cys  
 275 280 285  
 Asp Ala Asp Thr Val Trp Ile Asp Ile Glu Phe Pro Thr Ala Phe Ser  
 290 295 300  
 Lys Glu Ile Leu Glu Gln Ile Lys Val Gln Met Asn Thr Phe Ile Val  
 305 310 315 320  
 Val Asn Lys Tyr Pro Ala Lys Ile Thr Arg Lys Val Asp Ser Val Ser  
 325 330 335  
 Ala Ile Leu Pro Leu Glu Lys Thr Glu Phe Glu Tyr Phe Leu Phe Val  
 340 345 350  
 Asp Ser Ile Thr Asp Asn His Gly Asp Arg Leu Arg Glu Ile Ser Gly  
 355 360 365  
 Thr Gln Asp Glu Gly Arg Ala Gly Cys Tyr Ser Val Arg Arg Gly Gly  
 370 375 380  
 Cys Glu Arg Phe Asn Ala Met Asp Ala Lys Asp Phe Leu Asn Arg Leu  
 385 390 395 400  
 Thr Asp Leu Leu Tyr Asp Glu Ser Met Ala Phe Ser Ser Thr Asp Lys  
 405 410 415  
 Asp Gly Met Lys Glu Val Ile Glu Gln Ile Glu Glu Arg Val Ser Gln  
 420 425 430  
 Leu Gly Asp Lys Asn Lys Asp Gly Val Gly Gly Gln Glu Met Leu Ser  
 435 440 445  
 Tyr Val Val Ile Asp Gln Arg Tyr Asp Lys Asp Thr Arg Leu Thr Val  
 450 455 460  
 Asp Tyr Thr Leu Thr Asn Gly Glu Phe Ala Asn Asp Ile Tyr Ala Gly  
 465 470 475 480  
 Glu Pro Leu Asn Asp Cys Ala Asn Pro Asp Ile Asp Lys Asp Thr Leu  
 485 490 495  
 Arg Phe Val Thr Phe Ala His Gly Gly Glu Pro Ser Pro Ser Val Arg  
 500 505 510  
 Arg Arg Met Asp Met Tyr Pro Ile Met Leu Leu Ser His Gly Ser Ile  
 515 520 525  
 Tyr Thr Lys Glu Asp Ile Arg Asn Phe Cys Met Ala Arg Tyr Gly Asp  
 530 535 540  
 Ser Ile Arg Ser Val Glu Val Lys Leu Gly Tyr Ala Ala Gly Lys Lys  
 545 550 555 560  
 Glu Ser Glu Gly Phe Ile Arg Thr Leu Asp Val Tyr Leu Arg Leu Ser  
 565 570 575  
 Glu Gly Met Gln Gly Leu Asp Arg Asp Glu Phe Val Val Asp Leu Asp  
 580 585 590  
 Ser Glu Leu Arg Arg Leu Ser Pro Glu Thr Tyr Asn Tyr Arg Val Phe  
 595 600 605  
 Ile Asn Ser  
 610

&lt;210&gt; 7701

&lt;211&gt; 183

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;220&gt;

&lt;221&gt; UNSURE

&lt;222&gt; (107)

&lt;223&gt; Identity of amino acid sequences at the above locations are unknown.

&lt;400&gt; 7701

Asn	Ala	Lys	Phe	Lys	Thr	Met	Gly	Lys	Lys	Ala	Val	Ser	Lys	Leu	Phe
1				5					10					15	
Tyr	Cys	Thr	Ser	Ile	Ala	Leu	Thr	Phe	Val	Leu	Ala	Gly	Ile	Thr	Ile
			20					25					30		
Ala	Gly	Ala	Phe	Ala	Gly	His	Ile	Pro	Pro	Glu	His	Ser	Thr	Leu	Met
		35				40						45			
Pro	Phe	Ile	Gly	Leu	Ala	Leu	Ser	Gly	Leu	Leu	Leu	Ile	Asn	Leu	Val
	50					55					60				
Ala	Ala	Ile	Tyr	Trp	Gly	Ile	Arg	Arg	Arg	Phe	Trp	Ile	Ile	Ile	Pro
65					70					75					80
Leu	Ile	Ala	Ile	Ala	Ala	Asn	Trp	Gln	Tyr	Leu	Gly	Arg	Ile	Phe	Gln
				85					90					95	
Leu	Leu	Leu	Arg	Ser	Glu	Glu	Lys	Glu	Ala	Xaa	Thr	Leu	Lys	Ile	Ala
			100					105					110		
Thr	Tyr	Lys	Val	Asp	Ser	Phe	Gly	Thr	Lys	Gln	Ser	Gly	Tyr	Ser	Cys
		115					120					125			
Lys	Glu	Ile	Ala	Ala	Tyr	Met	Lys	Glu	His	Arg	Val	Asp	Ile	Ile	Cys
	130					135					140				
Phe	Gln	Glu	Phe	Val	Gly	Gln	Pro	Val	Leu	Leu	Leu	Gln	Thr	Ala	Tyr
145					150					155					160
Gly	Thr	His	Leu	Gln	Thr	Gly	Ser	Met	Pro	Ser	Phe	Arg	Lys	Leu	Arg
				165					170					175	
Thr	Ala	His	Leu	Ser	Cys	Arg									
			180												

&lt;210&gt; 7702

&lt;211&gt; 331

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7702

Glu	Leu	Asn	Ser	Lys	Ile	Met	Asn	Ile	Arg	Asn	Leu	Phe	Phe	Leu	Gly
1				5					10					15	
Ser	Ile	Leu	Leu	Leu	Leu	Ser	Cys	Lys	Asn	Ser	Lys	Gln	Gln	Glu	Gly
		20						25					30		
Tyr	Asn	Ser	Ile	Asn	Ile	Ile	Lys	Tyr	Ile	Asn	Ile	Tyr	Asn	Glu	Asn
		35				40						45			
Asn	Arg	Ile	Leu	Thr	Ala	Gln	Gly	Thr	Glu	Tyr	Asp	Tyr	Leu	Tyr	Phe
	50					55					60				
Gly	Asp	Asn	Lys	Asp	Lys	Glu	Ile	Leu	Ala	Asn	Val	Asn	Asn	Phe	Thr
65					70					75					80
Lys	Thr	Tyr	Ser	Tyr	Asp	Asn	Asp	Ser	Ser	Cys	Tyr	Thr	Val	Glu	Glu
			85					90						95	
Pro	Leu	Ser	Glu	Ser	Leu	Leu	Lys	Thr	Met	Arg	Tyr	Thr	Glu	Asn	Thr
		100						105					110		
Ile	Glu	Glu	Leu	Val	Leu	Glu	Asn	Lys	Asp	Thr	Phe	Ser	Tyr	Thr	
	115					120					125				
Phe	Ser	Thr	Tyr	Tyr	Asp	Lys	Asn	Lys	Pro	Lys	Tyr	Asn	Lys	Ser	Ile
	130					135					140				
Ile	Ile	Leu	Gly	Asp	Glu	Pro	Ser	Ser	Asp	Ser	Arg	Tyr	Glu	Glu	Tyr

145		150		155		160									
Tyr	Tyr	Tyr	Asp	Asn	Asn	Gly	Asn	Asn	Thr	Lys	Lys	Ile	His	His	Asp
			165						170						175
Leu	Asn	Thr	Gly	Gln	Arg	Glu	Glu	Thr	Tyr	Lys	Phe	Asn	Asp	Thr	Asp
			180						185						190
Tyr	Lys	Glu	Ala	Val	Asn	Leu	Val	Pro	Ser	Ser	Asp	Tyr	Lys	Gln	Asn
		195					200						205		
Ile	Glu	Cys	Ser	Leu	Lys	Gln	Thr	Val	Asn	Asp	Thr	Leu	Ile	Thr	Arg
	210					215					220				
Ile	Thr	Leu	Asn	Gly	Val	Leu	Asn	Arg	Val	Met	Lys	Glu	Tyr	Ile	Asp
225					230					235					240
Gly	Lys	Lys	Lys	Ile	Lys	Glu	Glu	Leu	Asp	Asn	Asp	Met	Thr	Leu	Val
				245					250					255	
Asn	Lys	Lys	Thr	Glu	Tyr	Glu	Glu	Asn	Gly	Leu	Lys	Val	Asn	Val	Asn
			260					265					270		
His	Thr	Ile	Arg	Ser	Thr	Gly	Tyr	Ser	Thr	Asp	Ser	Ile	Tyr	Tyr	Lys
		275					280					285			
Gly	Asn	Lys	Lys	Val	Lys	His	Ile	Tyr	Asn	Ser	Asp	Tyr	Asn	Gly	Thr
	290					295					300				
Ile	Thr	Leu	Glu	Ile	Ser	Glu	Tyr	Asp	Glu	Gln	Gly	Asn	Ile	Val	Lys
305					310					315					320
Lys	Thr	Lys	Lys	Leu	Arg	Trp	Pro	Ser	Asp	Lys					
				325					330						

<210> 7703  
 <211> 100  
 <212> PRT  
 <213> B.fragilis

<400> 7703

Pro	Ile	Phe	Leu	Thr	Ala	Ala	Ser	Arg	Arg	Ser	Leu	Asp	Arg	Val	Ser
1				5					10					15	
Val	Pro	Met	Trp	Gly	Thr	Phe	Leu	Ser	Glu	Pro	Leu	Ser	Ile	Glu	Gly
		20						25				30			
Leu	Val	Ser	Arg	Tyr	Leu	Thr	Asn	Asn	Leu	Met	Glu	Arg	Ile	Pro	Ile
		35					40					45			
Leu	Tyr	Arg	Asn	Pro	Leu	Ile	Met	Lys	Pro	Cys	Gly	Ile	Ile	Met	Leu
	50					55					60				
Ser	Gly	Ile	Asn	Leu	Ser	Phe	Glu	Arg	Leu	Ser	Pro	Ser	Lys	Gly	Gln
65					70					75					80
Val	Gly	Tyr	Val	Leu	Leu	Thr	Arg	Ala	Pro	Val	Ala	Ser	Lys	Glu	Ser
				85					90					95	
Lys	Leu	Ser	Ser												
			100												

<210> 7704  
 <211> 63  
 <212> PRT  
 <213> B.fragilis

<400> 7704

Pro	Pro	Thr	Lys	Leu	Asp	Asp	Ile	Pro	Ser	Glu	Cys	Arg	Val	Val	Pro
1				5					10					15	
Phe	Gly	Asn	Leu	Arg	Ile	Lys	Gly	His	Leu	His	Leu	Pro	Glu	Ala	Tyr
		20						25					30		
Arg	Ser	Leu	Ser	Arg	Pro	Ser	Ser	Pro	Pro	Arg	Ala	Lys	Ala	Ser	Ala
		35					40					45			
Met	Arg	Pro	Tyr	Leu	Leu	Ser	Phe	Ile	Ala	Arg	Asp	His	Phe	Leu	
	50					55					60				

<210> 7705  
 <211> 62  
 <212> PRT  
 <213> B.fragilis

<400> 7705

Cys	Arg	Gly	Arg	Gln	Phe	Asn	Ser	Ala	Trp	Asp	Tyr	Gln	Gln	Ile	Asp
1				5					10					15	
Ile	Leu	Ser	Cys	Met	Ile	Gly	Gly	Leu	Ala	Gln	Leu	Ala	Arg	Ala	Ser
			20					25					30		
Ala	Leu	His	Ala	Glu	Gly	Gln	Arg	Phe	Glu	Ser	Val	Ile	Leu	His	Ser
		35					40					45			
Asp	Thr	Ala	Thr	Glu	Gln	Ala	Cys	Val	Leu	Ser	Asn	Asp	Leu		
	50					55					60				

<210> 7706  
 <211> 667  
 <212> PRT  
 <213> B.fragilis

<400> 7706

Ser	Leu	Ile	Pro	Leu	Ile	Met	Lys	Met	Thr	Leu	Ser	Asn	Gln	Leu	Pro
1				5					10					15	
Glu	Tyr	Pro	Val	Phe	Ala	Glu	Gly	Ile	Arg	Arg	Ala	Pro	Asp	Arg	Gly
			20					25					30		
Tyr	Thr	Leu	Ser	Pro	Ala	Gln	Thr	Val	Thr	Ala	Leu	Lys	Asn	Ala	Leu
		35					40					45			
Arg	Tyr	Ile	Pro	Val	Glu	Leu	His	Arg	Lys	Leu	Ala	Pro	Glu	Phe	Leu
	50					55					60				
Glu	Glu	Leu	Arg	Thr	Arg	Gly	Arg	Ile	Tyr	Gly	Tyr	Arg	Phe	Arg	Pro
65					70				75						80
Ala	Gly	Asp	Leu	Lys	Ala	Lys	Pro	Val	Asp	Glu	Tyr	Gln	Gly	Asn	Cys
				85					90					95	
Ile	Glu	Gly	Lys	Ala	Phe	Gln	Val	Met	Ile	Asp	Asn	Asn	Leu	Cys	Phe
			100					105					110		
Asp	Ile	Ala	Leu	Tyr	Pro	Tyr	Glu	Leu	Val	Thr	Tyr	Gly	Glu	Thr	Gly
		115					120					125			
Gln	Val	Cys	Gln	Asn	Trp	Met	Gln	Tyr	Arg	Leu	Ile	Lys	Gln	Tyr	Leu
	130					135					140				
Glu	Leu	Leu	Thr	Arg	Glu	Gln	Thr	Leu	Val	Ile	Glu	Ser	Gly	His	Pro
145					150					155					160
Leu	Gly	Leu	Phe	His	Ser	Arg	Pro	Asp	Ala	Pro	Arg	Val	Ile	Ile	Thr
				165					170					175	
Asn	Ser	Met	Met	Val	Gly	Met	Phe	Asp	Asn	Gln	His	Asp	Trp	His	Glu
			180					185					190		
Ala	Ala	Gln	Met	Gly	Val	Ala	Asn	Tyr	Gly	Gln	Met	Thr	Ala	Gly	Gly
		195					200					205			
Trp	Met	Tyr	Ile	Gly	Pro	Gln	Gly	Ile	Val	His	Gly	Thr	Phe	Asn	Thr
	210					215						220			
Leu	Leu	Asn	Ala	Gly	Arg	Leu	Lys	Leu	Gly	Ile	Pro	Gln	Asp	Lys	Asn
225					230					235					240
Leu	Ser	Gly	His	Leu	Phe	Val	Ser	Ser	Gly	Leu	Gly	Gly	Met	Ser	Gly
				245					250					255	
Ala	Gln	Pro	Lys	Ala	Ala	Glu	Ile	Ala	Gly	Ala	Ala	Ser	Ile	Ile	Ala
			260					265					270		
Glu	Val	Asp	Arg	Ser	Arg	Ile	Glu	Thr	Arg	Tyr	Lys	Gln	Gly	Trp	Val
		275					280						285		
Glu	His	Val	Thr	Thr	Asp	Leu	His	Thr	Asp	Phe	Arg	Met	Ala	Leu	Ser

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400

290 295 300  
 Ala Ala Glu Arg His Glu Ser Cys Ser Val Ala Tyr His Gly Asn Val  
 305 310 315 320  
 Val Asp Leu Leu Glu Tyr Ala Val Gln Glu Asp Ile Pro Ile Glu Leu  
 325 330 335  
 Leu Ser Asp Gln Thr Ser Cys His Ala Val Tyr Glu Gly Gly Tyr Cys  
 340 345 350  
 Pro Ala Gly Val Thr Phe Lys Glu Arg Thr Arg Leu Leu His Glu Ser  
 355 360 365  
 Pro Glu Ala Phe Arg Arg Leu Val Asp Glu Ser Leu His Arg His Phe  
 370 375 380  
 Ala Val Ile Lys Lys Leu Val Ser Arg Gly Thr Tyr Phe Phe Asp Tyr  
 385 390 395 400  
 Gly Asn Ser Phe Met Lys Ala Val Tyr Asp Ala Gly Val Lys Glu Ile  
 405 410 415  
 Ser Arg Asn Gly Thr Asp Glu Lys Asp Gly Phe Ile Trp Pro Ser Tyr  
 420 425 430  
 Val Glu Asp Ile Met Gly Pro Glu Leu Phe Asp Tyr Gly Tyr Gly Pro  
 435 440 445  
 Phe Arg Trp Val Cys Leu Ser Gly Asn Pro Glu Asp Leu Ala Arg Thr  
 450 455 460  
 Asp Cys Ala Ala Met Glu Cys Ile Asp Val Lys Arg Arg Gly Gln Asp  
 465 470 475 480  
 Leu Asp Asn Tyr Asn Trp Ile Arg Asp Ala Gly Lys Asn Arg Leu Val  
 485 490 495  
 Val Gly Thr Gln Ala Arg Ile Leu Tyr Gln Asp Ala Val Gly Arg Leu  
 500 505 510  
 Lys Ile Ala Leu Arg Phe Asn Gln Met Val Arg Asp Gly Glu Val Gly  
 515 520 525  
 Pro Ile Met Leu Gly Arg Asp His His Asp Val Ser Gly Thr Asp Ser  
 530 535 540  
 Pro Phe Arg Glu Thr Ser Asn Ile Lys Asp Gly Ser Asn Val Met Ala  
 545 550 555 560  
 Asp Met Ala Val Gln Cys Phe Ala Gly Asn Cys Ala Arg Gly Met Ser  
 565 570 575  
 Leu Val Ala Leu His Asn Gly Gly Gly Val Gly Ile Gly Lys Ala Ile  
 580 585 590  
 Asn Gly Gly Phe Gly Met Val Cys Asp Gly Ser Leu Arg Val Asp Glu  
 595 600 605  
 Ile Leu Arg Ser Ser Met Leu Trp Asp Val Met Gly Gly Val Ala Arg  
 610 615 620  
 Arg Ser Trp Ala Arg Asn Glu His Ala Met Glu Thr Ser Glu Ala Phe  
 625 630 635 640  
 Asn Leu Ser His Gly Asp Ala Tyr His Ile Thr Leu Pro Tyr Leu Ala  
 645 650 655  
 Asp Glu Glu Leu Ile Lys Arg Ile Val Ala Glu  
 660 665

&lt;210&gt; 7707

&lt;211&gt; 81

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7707

Val Glu Leu Phe Val Asn Gln Gln Val Asp Asn Gly Lys Ile Asp Ile  
 1 5 10 15  
 Ile Pro Glu Tyr Ala Leu Leu Asn Ala His Leu Lys Lys Phe Asp Arg  
 20 25 30  
 Thr Val Arg Val Pro Leu Pro Ile Val Leu Gln Gln Thr Val Tyr Phe



35 40 45  
 Arg Ile Leu Leu Tyr Ile Phe Lys Lys Thr Leu Val Ser Pro Met Glu  
 50 55 60  
 Cys Leu Asn Ala Pro Leu Ile Thr His Lys Asn Asp Phe Lys Asn Ile  
 65 70 75 80  
 Leu

<210> 7708  
 <211> 211  
 <212> PRT  
 <213> B.fragilis

<400> 7708  
 Arg Ile Met Leu Ala Glu Leu Thr Val Lys Glu Phe Leu Asp Lys Val  
 1 5 10 15  
 Ala Gly Ser Asp Pro Val Pro Gly Gly Gly Ser Val Ala Ala Leu Asn  
 20 25 30  
 Gly Ala Val Ala Ser Ala Leu Thr Ala Met Val Ala Gly Leu Thr Ile  
 35 40 45  
 Gly Lys Lys Gly Tyr Glu Glu His Glu Glu Leu Met Lys His Ile Ser  
 50 55 60  
 Arg Leu Ser Ile Arg Gln Gln Glu Leu Phe Val Glu Tyr Ile Asp Arg  
 65 70 75 80  
 Asp Ser Glu Ala Tyr Asp His Val Phe Gly Cys Phe Lys Leu Pro Lys  
 85 90 95  
 Ser Thr Asp Glu Glu Lys Ala Ala Arg Ser Ala Ala Ile Gln Glu Ala  
 100 105 110  
 Thr Arg Phe Ala Ala Leu Val Pro Met Gln Val Ala Arg Asn Ala Cys  
 115 120 125  
 Glu Leu Met Glu Ile Ile Ala Asp Val Ala Arg Leu Gly Asn Gln Asn  
 130 135 140  
 Ala Ile Thr Asp Ala Cys Val Ala Met Met Ala Ala Arg Ser Ala Val  
 145 150 155 160  
 Leu Gly Ala Leu Leu Asn Val Arg Ile Asn Leu Gly Ser Leu Lys Asp  
 165 170 175  
 Lys Thr Phe Val Asp Glu Leu Lys Arg Glu Ala Asp His Leu Glu Gln  
 180 185 190  
 Leu Ala Cys Met Arg Glu Lys Glu Leu Leu Glu Val Val Asn Gln Glu  
 195 200 205  
 Leu Asn Gln  
 210

<210> 7709  
 <211> 327  
 <212> PRT  
 <213> B.fragilis

<400> 7709  
 Ser Cys Gln Pro Arg Thr Glu Pro Met Asn Asn Val Tyr Tyr Val Gly  
 1 5 10 15  
 Ser Gly Glu Leu Thr Phe Ser Ile Ile Glu Arg Ile Ile Asn Glu Asn  
 20 25 30  
 Leu Lys Leu Glu Leu Ala Pro Glu Ala Glu Gln Arg Ile Arg Lys Cys  
 35 40 45  
 Arg Asp Tyr Leu Asp Arg Lys Ile Ala Ala Ser Thr Glu Pro Leu Tyr  
 50 55 60  
 Gly Ile Thr Thr Gly Phe Gly Ser Leu Cys Ser Lys Asn Ile Ser Ser  
 65 70 75 80

Asp	Glu	Leu	Asn	Thr	Leu	Gln	Glu	Asn	Leu	Val	Lys	Ser	His	Ala	Cys	
				85					90					95		
Ser	Val	Gly	Glu	Glu	Leu	Arg	Pro	Val	Ile	Ile	Lys	Leu	Met	Leu	Leu	
			100					105					110			
Leu	Lys	Ala	His	Ala	Leu	Ser	Leu	Gly	His	Ser	Gly	Val	Gln	Val	Ile	
			115				120					125				
Thr	Val	Gln	Arg	Ile	Leu	Asp	Phe	Phe	Asn	Asn	Asp	Val	Met	Pro	Ile	
			130			135					140					
Val	Tyr	Asp	Arg	Gly	Ser	Leu	Gly	Ala	Ser	Gly	Asp	Leu	Ala	Pro	Leu	
145					150					155					160	
Ala	Asn	Leu	Phe	Leu	Pro	Leu	Ile	Gly	Val	Gly	Asp	Val	Tyr	Tyr	Lys	
				165					170						175	
Gly	Lys	Lys	Arg	Glu	Ala	Ile	Ser	Val	Leu	Asp	Glu	Phe	Gly	Trp	Glu	
			180					185					190			
Pro	Val	Arg	Leu	Met	Ser	Lys	Glu	Gly	Leu	Ala	Leu	Leu	Asn	Gly	Thr	
			195				200					205				
Gln	Phe	Met	Ser	Ala	Asn	Gly	Val	Phe	Ala	Leu	Leu	Lys	Ala	Trp	Arg	
						215						220				
Leu	Ser	Lys	Lys	Ala	Asp	Met	Ile	Ala	Ala	Leu	Ser	Leu	Glu	Ala	Phe	
225					230					235					240	
Asp	Gly	Arg	Ile	Asp	Pro	Phe	Met	Glu	Cys	Ile	Gln	Gln	Ile	Arg	Pro	
				245					250					255		
His	Pro	Gly	Gln	Ile	Glu	Thr	Gly	Glu	Ile	Phe	Arg	Arg	Leu	Leu	His	
			260					265					270			
Gly	Ser	Glu	Leu	Ile	Ala	Arg	Thr	Lys	Lys	His	Val	Gln	Asp	Pro	Tyr	
			275				280					285				
Phe	Phe	Trp	Leu	Asp	Ser	Ser	Gly	Ala	Trp	Gly	His	Glu	Arg	Cys	His	
			290			295					300					
Pro	Gly	Arg	Leu	Phe	Arg	Phe	Gly	Asp	Arg	Asp	Asn	Ser	Lys	Cys	Gly	
305					310					315					320	
His	Ser	Ala	Leu	Phe	Pro	Gly										
					325											

&lt;210&gt; 7710

&lt;211&gt; 309

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7710

Ser	Val	Val	Pro	Leu	Lys	Arg	Cys	Ser	Met	Asn	Trp	Asn	Lys	Ile	Val	
1				5					10					15		
Glu	Cys	Val	Pro	Asn	Phe	Ser	Glu	Gly	Arg	Asp	Leu	Glu	Lys	Met	Asp	
			20					25					30			
Arg	Ile	Val	Ala	Pro	Phe	Arg	Ala	Arg	Ser	Gly	Val	Lys	Leu	Leu	Asp	
			35				40					45				
Tyr	Ser	Asn	Asp	Glu	Asp	His	Asn	Arg	Leu	Val	Val	Thr	Leu	Ile	Gly	
			50			55					60					
Glu	Pro	Glu	Ala	Leu	Arg	Asp	Ala	Val	Ile	Glu	Ala	Ile	Gly	Val	Ala	
65					70					75					80	
Val	Glu	Leu	Ile	Asp	Leu	Asn	His	His	Arg	Gly	Gln	His	Pro	Arg	Met	
				85					90					95		
Gly	Ala	Val	Asp	Val	Val	Pro	Phe	Ile	Pro	Ile	Lys	Asn	Val	Thr	Met	
			100					105					110			
Asp	Glu	Ala	Val	Ser	Leu	Ser	Arg	Glu	Ile	Gly	Glu	Lys	Val	Ala	Gly	
			115				120					125				
Leu	Tyr	His	Leu	Pro	Val	Phe	Leu	Tyr	Glu	Lys	Ser	Ala	Thr	Ala	Pro	
			130			135					140					
His	Arg	Glu	Asn	Leu	Ala	Ala	Val	Arg	Lys	Gly	Glu	Phe	Glu	Gly	Met	
145					150					155					160	

Ala Glu Lys Met Lys Leu Pro Glu Trp His Pro Asp Tyr Gly Pro Ala  
 165 170 175  
 Gly Cys His Pro Thr Ala Gly Val Val Ala Ile Gly Ala Arg Met Pro  
 180 185 190  
 Leu Val Ala Tyr Asn Ile Asn Leu Ser Thr Asp Asn Leu Glu Ile Ala  
 195 200 205  
 Thr Lys Ile Ala Lys Asn Ile Arg His Ile Asn Gly Gly Leu Arg Tyr  
 210 215 220  
 Val Lys Ala Met Gly Val Glu Leu Lys Glu Arg Asn Ile Thr Gln Val  
 225 230 235 240  
 Ser Ile Asn Met Thr Asp Tyr Thr Arg Thr Ala Leu Tyr Arg Ala Phe  
 245 250 255  
 Glu Leu Val Arg Ile Glu Ala Arg Arg Tyr Gly Val Thr Ile Leu Gly  
 260 265 270  
 Ser Glu Ile Val Gly Leu Val Pro Met Glu Ala Leu Ile Asp Thr Ala  
 275 280 285  
 Ser Tyr Tyr Leu Gly Leu Glu Asn Phe Ser Met Arg Gln Val Leu Glu  
 290 295 300  
 Ser Arg Ile Met Glu  
 305

<210> 7711

<211> 102

<212> PRT

<213> B.fragilis

<400> 7711

Arg Arg Asn Gln Asp Met Lys Ser Val Leu Ile Thr Phe Asp Gln Ala  
 1 5 10 15  
 Tyr Tyr Glu Arg Ile Ile Ala Leu Leu Asp Arg Leu Gly Cys Arg Gly  
 20 25 30  
 Phe Thr Tyr Leu Glu Arg Val Gln Gly Arg Gly Ser Lys Thr Gly Asp  
 35 40 45  
 Pro His Phe Gly Ser His Ala Trp Pro Ser Met Cys Ser Ala Ile Ile  
 50 55 60  
 Thr Val Val Asp Asp Lys Lys Val Asp Pro Leu Leu Asp Ala Leu His  
 65 70 75 80  
 Arg Met Asp Met Gln Thr Glu Gln Leu Gly Leu Arg Ala Phe Val Thr  
 85 90 95  
 Asn Val Glu Arg Ser Ile  
 100

<210> 7712

<211> 75

<212> PRT

<213> B.fragilis

<400> 7712

Asp Thr Val Gln Thr Pro Thr Gly Gly Ser Ser Glu Glu Tyr Trp Ser  
 1 5 10 15  
 Met Gly Ala Ser Leu Asn Gln Pro Ser Ser Val Lys Asp Glu Gly Ser  
 20 25 30  
 Met Gly Arg Lys Leu Leu Leu Tyr Lys Asn Arg Val Gln His Val Trp  
 35 40 45  
 Cys Val Val Cys Ile Glu Gly Ile Met Gln Thr Ser Tyr Ser Arg Leu  
 50 55 60  
 His His Ala Ala Val Ser Ile Asp Glu Arg Ser  
 65 70 75

<210> 7713  
 <211> 100  
 <212> PRT  
 <213> B.fragilis

<400> 7713

Pro Ile Phe Leu Thr Ala Ala Ser Arg Arg Ser Leu Asp Arg Val Ser  
 1 5 10 15  
 Val Pro Met Trp Gly Thr Phe Leu Ser Glu Pro Leu Ser Ile Glu Gly  
 20 25 30  
 Leu Val Gly Arg Tyr Leu Thr Asn Asn Leu Met Glu Arg Ile Pro Ile  
 35 40 45  
 Leu Tyr Arg Asn Pro Leu Ile Met Lys Pro Cys Gly Ile Ile Met Leu  
 50 55 60  
 Ser Gly Ile Asn Leu Ser Phe Glu Arg Leu Ser Pro Ser Lys Gly Gln  
 65 70 75 80  
 Val Gly Tyr Val Leu Leu Thr Arg Ala Pro Val Ala Ser Lys Glu Ser  
 85 90 95  
 Lys Leu Ser Ser  
 100

<210> 7714  
 <211> 310  
 <212> PRT  
 <213> B.fragilis

<400> 7714

Phe Met Glu Lys Asn Ser Met Lys Gly Glu Arg Pro Met Arg Leu Asn  
 1 5 10 15  
 Arg Trp Leu Gly Val Leu Ile Leu Leu Ser Gly Val Trp Ser Val  
 20 25 30  
 Arg Ala Gln Asp Leu Leu Pro Ala Cys Pro Gln Val Asp Lys Gly Thr  
 35 40 45  
 Lys Ala Cys Lys Pro Met Arg Glu Pro Gly Ser Leu Gly Asp Thr Val  
 50 55 60  
 Ser Val Lys Ile Val Phe Pro Val Ala Phe Lys Gly Val Gly Arg Asn  
 65 70 75 80  
 Glu Val Val Asp Ser Leu Gly Ile Leu Ala Pro Val Leu Glu His Leu  
 85 90 95  
 Arg Leu Val Gln Asn Gly Ser Ser Glu Asp Thr Val Arg Ile Val His  
 100 105 110  
 Ile Gly Asp Ser His Ile Arg Gly His Ile Phe Pro Arg Thr Thr Gly  
 115 120 125  
 Ala Arg Leu Thr Glu Thr Phe Gly Ala Ile Ser Tyr Thr Asp Met Gly  
 130 135 140  
 Val Asn Gly Ala Thr Cys Leu Thr Phe Thr His Pro Asp Arg Ile Ala  
 145 150 155 160  
 Ala Ile Ala Ala Leu Lys Pro Glu Leu Leu Ile Leu Ser Phe Gly Thr  
 165 170 175  
 Asn Glu Ser His Asn Arg Lys Tyr Asn Ser Asn Val His Tyr Arg Gln  
 180 185 190  
 Met Glu Glu Leu Leu Glu Leu Leu Arg Asp Ser Leu Pro Asp Val Pro  
 195 200 205  
 Ile Leu Met Thr Thr Pro Pro Gly Ser Tyr Glu Ser Phe Arg Gln Arg  
 210 215 220  
 Arg Arg Arg Arg Thr Tyr Ala Ile Asn Pro Arg Thr Val Thr Ala Val  
 225 230 235 240  
 Asn Thr Ile His Asp Phe Ala Arg Arg His Lys Leu Val Val Trp Asp  
 245 250 255

Met Tyr Asn Val Val Gly Gly Ser Leu Arg Ala Cys Lys Asn Trp Ser  
                   260                  265                  270  
 Asp Ala Arg Leu Met Arg Pro Asp His Val His Tyr Leu Pro Glu Gly  
                   275                  280                  285  
 Tyr Thr Leu Gln Gly Glu Leu Leu Tyr Glu Ala Ile Ile Lys Ala Tyr  
                   290                  295                  300  
 Asn Glu Tyr Val Ser His  
                   305                  310

<210> 7715

<211> 220

<212> PRT

<213> B.fragilis

<400> 7715

Gln Gln Lys Asn Gly Leu Met Ile Glu Asn Ala Lys Glu Asn Ser Gln  
 1                  5                  10                  15  
 Arg Val Glu Leu Lys Asp Arg Ile Ile Glu Thr Ala Ser Glu Ala Phe  
                   20                  25                  30  
 Thr Thr His Gly Ile Lys Ser Ile Thr Met Asp Asp Ile Ala Ala Ser  
                   35                  40                  45  
 Leu Gly Ile Ser Lys Arg Thr Leu Tyr Glu Val Phe Gln Asp Lys Glu  
                   50                  55                  60  
 Ser Leu Leu Thr Gln Cys Ile Leu Lys Arg Gln Glu Glu Met Asn Ala  
                   65                  70                  75                  80  
 Phe Leu Ala Glu Thr Leu Ala Asn Ser Lys Asn Val Leu Glu Val Ile  
                   85                  90                  95  
 Leu Val Cys Tyr Gln Arg Ser Ile Glu Thr Phe His Arg Thr Asn Lys  
                   100                  105                  110  
 Arg Phe Phe Glu Asp Ile Lys Lys Tyr Pro Lys Val His Ser Leu Leu  
                   115                  120                  125  
 Lys Asn Tyr Arg Glu Arg Asp Ser Asp Ser Thr Ile Glu Phe Phe Lys  
                   130                  135                  140  
 Met Gly Ile Lys Gln Gly Ile Phe Arg Asp Asp Val Asn Phe Ala Ile  
                   145                  150                  155                  160  
 Val Asn Leu Leu Val His Glu Gln Leu Asp Leu Leu Met Asn Thr Asp  
                   165                  170                  175  
 Ile Cys Asn Lys Tyr Ser Phe Leu Glu Val Tyr Glu Ala Ile Met Phe  
                   180                  185                  190  
 Thr Tyr Ile Arg Gly Ile Ser Thr Glu Lys Gly Ala Lys Val Leu Glu  
                   195                  200                  205  
 Asp Phe Ile Thr Glu Tyr Arg Lys Gln Arg Ile His  
                   210                  215                  220

<210> 7716

<211> 1021

<212> PRT

<213> B.fragilis

<400> 7716

Leu Pro Ile Asp Leu Tyr Pro Asp Ile Asp Thr Asn Thr Ile Met Val  
 1                  5                  10                  15  
 Met Thr Ala Tyr Pro Gly Ala Ser Ala Ser Asp Ile Glu Asn Asn Val  
                   20                  25                  30  
 Thr Arg Pro Leu Glu Asn Thr Leu Asn Ala Val Ser Asn Leu Lys His  
                   35                  40                  45  
 Ile Thr Ser Arg Ser Ser Glu Asn Met Ser Leu Ile Thr Leu Glu Phe  
                   50                  55                  60  
 Glu Tyr Gly Asn Asp Ile Asp Val Leu Thr Asn Asp Val Arg Asp Lys

65	70	75	80
Leu Asp Met Val	Ser Ser Gln Leu Pro	Asp Asp Val Glu Asn Pro	Ile
	85	90	95
Ile Phe Lys Phe	Ser Thr Asp Met	Ile Pro Ile Val	Leu Leu Ser Val
	100	105	110
Gln Ala Asn Glu	Ser Gln Ser Ala	Leu Tyr Lys Ile	Leu Asp Asp Arg
	115	120	125
Val Val Asn Pro	Leu Ala Arg Ile	Pro Gly Val Gly	Thr Val Ser Ile
	130	135	140
Ser Gly Ala Pro	Gln Arg Glu Ile	Gln Val Tyr Cys	Asp Pro Gly Lys
145	150	155	160
Leu Glu Ala Tyr	Asn Leu Thr Ile	Glu Thr Ile Ser	Ser Ile Ile Gly
	165	170	175
Ala Glu Asn Lys	Asn Ile Pro Gly	Gly Asn Phe Asp	Ile Gly Asn Glu
	180	185	190
Thr Tyr Ser Leu	Arg Val Glu Gly	Glu Phe Asp Asp	Ser Arg Gln Leu
	195	200	205
Glu Asp Val Val	Val Gly Ser Tyr	Asn Gly Ala Asn	Val Tyr Leu Arg
210	215	220	
Asp Val Ala Arg	Val Val Asp Thr	Val Glu Glu Arg	Ala Gln Glu Thr
225	230	235	240
Tyr Asn Asn Gly	Val Lys Gly Ala	Met Ile Val Val	Gln Lys Gln Ser
	245	250	255
Gly Ala Asn Ser	Val Asp Ile Ser	Lys Lys Val Ala	Glu Ala Leu Pro
	260	265	270
Lys Leu Gln Lys	Asn Leu Pro Ser	Asp Val Lys Leu	Gly Val Ile Val
	275	280	285
Asp Thr Ser Asp	Asn Ile Leu Asn	Thr Ile Asp Ser	Leu Ala Glu Thr
290	295	300	
Val Leu Tyr Ala	Leu Leu Phe Val	Val Ile Val Val	Phe Leu Phe Leu
305	310	315	320
Gly Arg Trp Arg	Ala Thr Leu Ile	Ile Cys Ile Thr	Ile Pro Leu Ser
	325	330	335
Leu Ile Ala Ser	Phe Ile Tyr Leu	Ala Val Thr Gly	Asn Thr Ile Asn
	340	345	350
Ile Ile Ser Leu	Ser Ser Leu Ser	Ile Ala Ile Gly	Met Val Val Asp
	355	360	365
Asp Ala Ile Val	Val Leu Glu Asn	Val Thr Thr His	Ile Glu Arg Gly
370	375	380	
Ser Asp Pro Lys	Gln Ala Ala Val	His Gly Thr Asn	Glu Val Ala Ile
385	390	395	400
Ser Val Ile Ala	Ser Thr Leu Thr	Met Ile Ala Val	Phe Phe Pro Leu
	405	410	415
Thr Met Val Ser	Gly Met Ser Gly	Val Met Phe Lys	Gln Leu Gly Trp
	420	425	430
Met Met Cys Ala	Ile Met Phe Ile	Ser Thr Val Ala	Ala Leu Ser Leu
	435	440	445
Thr Pro Met Leu	Cys Ser Gln Leu	Leu Arg Leu Gln	Lys Lys Gln Ser
450	455	460	
Lys Thr Phe Lys	Leu Leu Phe Gly	Pro Ile Glu Lys	Gly Leu Asp Ala
465	470	475	480
Leu Asp Thr Gly	Tyr Ala Arg Met	Leu Asn Trp Ala	Val Arg His Arg
	485	490	495
Pro Ile Val Ile	Phe Gly Cys Ile	Val Phe Phe Val	Val Ser Leu Phe
	500	505	510
Cys Ala Lys Ser	Ile Gly Thr Glu	Phe Phe Pro Ala	Gln Asp Asn Ala
	515	520	525
Arg Ile Ala Val	Gln Leu Glu Leu	Pro Ile Gly Thr	Arg Lys Glu Leu
530	535	540	

Ala	Gln	Glu	Val	Ser	Glu	Lys	Leu	Thr	Asn	Gln	Trp	Leu	Asn	Lys	Tyr
545					550				555						560
Lys	Gly	Val	Met	Thr	Val	Cys	Asn	Tyr	Thr	Val	Gly	Gln	Ala	Asp	Ser
				565					570					575	
Asp	Asn	Thr	Trp	Ala	Ser	Met	Gln	Asp	Asn	Gly	Ser	His	Ile	Ile	Ser
			580					585					590		
Phe	Asn	Ile	Ser	Leu	Val	Asp	Pro	Gly	Asp	Arg	Asp	Ile	Ser	Leu	Glu
		595					600					605			
Gln	Val	Cys	Asp	Glu	Met	Arg	Glu	Asp	Leu	Lys	Lys	Tyr	Pro	Glu	Phe
610						615					620				
Ser	Lys	Ala	Gln	Val	Ile	Leu	Gly	Gly	Ser	Asn	Thr	Gly	Met	Ser	Ala
625				630					635						640
Gln	Ala	Ser	Ala	Asp	Phe	Glu	Val	Tyr	Gly	Tyr	Ser	Met	Glu	Glu	Thr
				645					650					655	
Asp	Ser	Val	Ala	Ala	Arg	Leu	Lys	Arg	Glu	Leu	Leu	Asn	Val	Lys	Gly
			660					665					670		
Val	Ser	Glu	Val	Asn	Ile	Ser	Arg	Ser	Asp	Tyr	Gln	Pro	Glu	Tyr	Gln
		675					680					685			
Val	Asp	Phe	Asp	Arg	Glu	Lys	Leu	Ala	Leu	His	Gly	Leu	Asn	Leu	Ala
690					695						700				
Thr	Ala	Gly	Asn	Tyr	Leu	Arg	Asn	Arg	Ile	Asn	Gly	Ala	Ile	Ala	Ser
705				710						715					720
Lys	Tyr	Arg	Glu	Asp	Gly	Asp	Glu	Tyr	Asp	Ile	Lys	Val	Arg	Tyr	Ala
				725					730					735	
Pro	Glu	Tyr	Arg	Thr	Ser	Ile	Glu	Ser	Ile	Glu	Asn	Ile	Leu	Ile	Tyr
			740					745					750		
Asn	Ser	Arg	Gly	Glu	Ala	Val	Arg	Val	Lys	Glu	Leu	Gly	Lys	Val	Val
		755					760					765			
Glu	Arg	Phe	Ala	Pro	Pro	Thr	Ile	Glu	Arg	Lys	Asp	Arg	Glu	Arg	Ile
770					775						780				
Val	Thr	Val	Ser	Ala	Val	Ile	Ser	Gly	Glu	Ala	Leu	Gly	Asn	Val	Val
785					790					795					800
Asn	Ala	Gly	Asn	Ala	Ile	Ile	Asp	Lys	Met	Asp	Ile	Pro	Ser	Asn	Val
			805					810						815	
Thr	Ile	Gln	Val	Ala	Gly	Ser	Tyr	Glu	Asp	Gln	Gln	Asp	Ser	Phe	Arg
			820					825					830		
Asp	Leu	Gly	Thr	Leu	Ala	Ile	Leu	Ile	Val	Val	Leu	Val	Phe	Ile	Val
		835					840					845			
Met	Ala	Ala	Gln	Phe	Glu	Ser	Leu	Thr	Tyr	Pro	Phe	Ile	Ile	Met	Phe
850					855					860					
Ser	Leu	Pro	Phe	Ala	Phe	Ser	Gly	Val	Leu	Met	Ala	Leu	Phe	Phe	Thr
865				870					875						880
Lys	Ser	Thr	Leu	Ser	Val	Met	Ser	Leu	Leu	Gly	Ala	Ile	Met	Leu	Ile
				885					890					895	
Gly	Ile														

1010

1015

1020

<210> 7717  
 <211> 64  
 <212> PRT  
 <213> B.fragilis

<400> 7717

Arg	Asn	Ile	Glu	Asn	Lys	Gly	Tyr	Thr	Lys	Thr	Gly	Asn	Lys	Glu	Ile
1				5					10					15	
Pro	Lys	Glu	Asp	Lys	Gln	Leu	Lys	Leu	Leu	Tyr	Glu	Gln	Asn	Glu	Met
			20					25					30		
Phe	Leu	Lys	Gln	Lys	Asp	Ala	Phe	Gly	Gly	Gly	Cys	Thr	Ala	Leu	Gly
		35					40					45			
Gly	Leu	Cys	Thr	Gly	Thr	Gly	Gly	Lys	Gly	His	Arg	Ala	Thr	Asp	Ala
	50					55					60				

<210> 7718  
 <211> 75  
 <212> PRT  
 <213> B.fragilis

<400> 7718

Gly	Glu	Asn	Arg	Asp	Phe	Asn	Arg	Asn	Leu	Thr	Glu	Ile	Lys	Arg	Gly
1				5					10					15	
Leu	Ser	Lys	Lys	Leu	Gly	Gly	Thr	Pro	Trp	Arg	Glu	Leu	Asn	Gly	Asn
			20					25					30		
Gln	Thr	Glu	Ile	Glu	Arg	Lys	Thr	Ala	Leu	Thr	Leu	Leu	Met	Arg	Leu
		35					40					45			
Gly	Arg	His	Leu	Phe	Gln	Gly	Arg	Lys	Glu	Gln	Ser	Phe	Gly	Phe	Lys
	50					55					60				
Lys	Thr	Cys	Tyr	Leu	Glu	Thr	Lys	Gly	Leu	Ile					
	65				70					75					

<210> 7719  
 <211> 419  
 <212> PRT  
 <213> B.fragilis

<400> 7719

Arg	Ile	Met	Ser	Glu	Asn	Leu	Ile	Ile	Phe	Asn	Ala	Lys	Val	Val	Thr
1				5					10					15	
Pro	Leu	Gly	Phe	Ser	Ala	Arg	Lys	Gly	Lys	Glu	Met	Ala	Glu	Leu	Arg
			20					25					30		
Ile	Leu	Glu	Lys	Ala	Thr	Val	Glu	Val	Val	Asp	Gly	Ile	Ile	Thr	Tyr
		35					40					45			
Val	Gly	Pro	Asn	Arg	Gly	Glu	Val	Arg	Asp	Gly	Tyr	Tyr	His	His	Phe
	50					55				60					
Trp	His	Tyr	Asn	Ala	Arg	Gly	Lys	Cys	Leu	Leu	Pro	Gly	Phe	Val	Asp
	65				70				75					80	
Ser	His	Thr	His	Phe	Val	Phe	Gly	Gly	Glu	Arg	Ala	Glu	Glu	Phe	Ser
			85					90					95		
Trp	Arg	Leu	Lys	Gly	Glu	Ser	Tyr	Met	Ser	Ile	Met	Gln	Arg	Gly	Gly
		100						105					110		
Gly	Ile	Ala	Ser	Thr	Val	Gln	Ala	Thr	Arg	Glu	Leu	Ser	Phe	Ile	His
		115					120					125			
Leu	Arg	Ser	Lys	Ala	Glu	Gly	Leu	Leu	Lys	Lys	Met	Thr	Ala	Met	Gly
	130					135					140				
Ile	Thr	Thr	Val	Glu	Gly	Lys	Ser	Gly	Tyr	Gly	Leu	Asn	Arg	Glu	Thr



145 150 155 160  
 Glu Leu Leu Gln Leu Lys Val Met Arg Ser Leu Asn Lys Asp Glu Gly  
 165 170 175  
 Val Arg Val Asp Ile Val Pro Thr Phe Leu Gly Ala His Ala Leu Pro  
 180 185 190  
 Asp Glu Tyr Lys Glu Arg Pro Asp Asp Tyr Ile Asp Phe Leu Ile Arg  
 195 200 205  
 Glu Leu Leu Pro Val Ile Gln Arg Asp Ser Leu Ala Glu Phe Cys Asp  
 210 215 220  
 Val Phe Cys Glu Glu Gly Val Phe Ser Ile Glu Gln Ser Arg Arg Leu  
 225 230 235 240  
 Leu Thr Ala Ala Gly Asp Tyr Gly Leu Leu Pro Lys Leu His Ala Asp  
 245 250 255  
 Glu Ile Val Ser Leu Gly Gly Ala Glu Leu Ala Ala Glu Leu Gly Ala  
 260 265 270  
 Val Ser Ala Asp His Leu Leu His Ala Ser Asp Ala Gly Ile Glu Ala  
 275 280 285  
 Met Ala Arg Lys Gly Val Val Ala Thr Leu Leu Pro Leu Thr Ala Phe  
 290 295 300  
 Ala Leu Lys Glu Pro Tyr Ala Arg Gly Arg Asp Met Ile Asp Ala Gly  
 305 310 315 320  
 Cys Ala Val Ala Leu Ala Thr Asp Leu Asn Pro Gly Ser Cys Phe Ser  
 325 330 335  
 Gly Ser Ile Pro Leu Thr Phe Ala Leu Ala Cys Ile His Met Gln Leu  
 340 345 350  
 Thr Val Glu Glu Ala Ile Thr Ala Leu Thr Leu Asn Gly Ala Ala Ala  
 355 360 365  
 Leu Asn Arg Ala Asp Ser Ile Gly Ser Ile Glu Val Gly Lys Lys Gly  
 370 375 380  
 Asp Phe Val Val Leu Asp Ser Asp Asn Tyr His Ile Leu Pro Tyr Tyr  
 385 390 395 400  
 Val Gly Met Asn Cys Val Asn Thr Thr Ile Lys Gly Gly Met Leu Tyr  
 405 410 415  
 Pro Ser Val

&lt;210&gt; 7720

&lt;211&gt; 489

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7720

His Gln Arg Arg Ile Cys Val Asn Phe Met Gln Ile Leu Leu Ser Phe  
 1 5 10 15  
 Tyr Gly Phe Tyr Leu Ser Leu Gln Leu Leu Ile Lys Leu Arg Ala Cys  
 20 25 30  
 Met Lys Asn Tyr Leu Lys Tyr Ser Leu Trp Leu Thr Leu Ile Val Leu  
 35 40 45  
 Phe Ala Leu Ile Gly Met His Trp Leu Pro Ala Ile Thr Ile Asp Gly  
 50 55 60  
 His Thr Met Arg Arg Val Asp Leu Leu Ser Asp Val Arg Met Pro Glu  
 65 70 75 80  
 Pro Asp Lys Asp Glu Val Val Ala Asp Ser Leu Pro Pro Val Pro Val  
 85 90 95  
 Val Lys Pro Ala Phe Val Asp Thr Cys Arg Ser Gly Met Thr Cys Ile  
 100 105 110  
 Glu Asp Tyr Ser Asp Ser Thr Met Arg Gly Met Thr Pro Phe Tyr Arg  
 115 120 125  
 Ala Leu Asp Glu Ile Gln Ser Lys Gly Arg Leu Val Arg Ile Ala Val

130 135 140  
 Phe Gly Asp Ser Phe Ile Glu Ala Asp Ile Phe Thr Ala Asp Leu Arg  
 145 150 155 160  
 Glu Met Leu Gln Lys Arg Phe Gly Gly Cys Gly Val Gly Phe Val Thr  
 165 170 175  
 Ile Thr Ser Met Thr Ser Gly Tyr Arg Pro Thr Val Arg His Ser Phe  
 180 185 190  
 Gly Gly Trp Ser Ser His Ala Val Thr Asp Ser Val Tyr Phe Asp Lys  
 195 200 205  
 Lys Lys Gln Gly Ile Ser Gly His Tyr Phe Val Pro Arg Glu Arg Ala  
 210 215 220  
 Tyr Val Glu Leu Arg Gly Gln Asn Lys Tyr Ala Ser Leu Leu Asp Thr  
 225 230 235 240  
 Cys Gln Ile Ala Ser Ile Phe Phe Tyr Asn Lys Gly Glu Val Asn Leu  
 245 250 255  
 Ser Val Cys Val Asn Arg Gly Glu Ala Glu Ala Arg Asp Phe Ser Thr  
 260 265 270  
 Thr Gly Arg Leu Gln Gln Met Lys Val Asn Gly Arg Ile Gly Ser Val  
 275 280 285  
 Arg Trp Asp Ile Asn Arg Ala Asp Ser Thr Leu Phe Tyr Gly Val Ala  
 290 295 300  
 Met Asp Gly Thr Gln Gly Val Val Val Asp Asn Phe Ser Leu Arg Gly  
 305 310 315 320  
 Ser Ser Gly Leu Ser Leu Arg Ser Ile Pro Ser Lys Met Leu Gln Glu  
 325 330 335  
 Phe Asn Ala Gln Arg Pro Tyr Asp Leu Ile Ile Leu Glu Tyr Gly Leu  
 340 345 350  
 Asn Val Ala Thr Glu Arg Gly Arg Asn Tyr Asp Pro Tyr Lys Lys Gly  
 355 360 365  
 Leu Leu Thr Ala Ile Asn His Leu Lys Glu Cys Phe Pro Gln Ala Gly  
 370 375 380  
 Phe Leu Leu Leu Ser Val Gly Asp Arg Asp Tyr Lys Thr Asp Thr Gly  
 385 390 395 400  
 Glu Leu Arg Thr Met Pro Gly Val Lys Asn Leu Ile Arg Tyr Gln Gln  
 405 410 415  
 Asn Ile Ala Ala Glu Ser Gly Ile Ala Phe Trp Asn Met Phe Glu Ala  
 420 425 430  
 Met Gly Gly Glu Gly Ser Met Ala Gly Leu Val His Ala Lys Pro Ser  
 435 440 445  
 Leu Ala Asn Tyr Asp Tyr Thr His Ile Asn Phe Arg Gly Gly Arg His  
 450 455 460  
 Leu Ala Gly Leu Leu Tyr Glu Thr Leu Ile Tyr Gly Lys Glu Gln Tyr  
 465 470 475 480  
 Glu Arg Arg Lys Ala Tyr Glu Ala Glu  
 485

<210> 7721  
 <211> 213  
 <212> PRT  
 <213> B.fragilis

<400> 7721  
 Asp Ala Phe Met Lys Lys Leu Cys Phe Leu Leu Leu Met Ser Trp Val  
 1 5 10 15  
 Val Met Asp Val Thr Ala Gln Asn Val Val Tyr Ser Asn Leu Lys Gly  
 20 25 30  
 Leu Leu Ala Cys Glu Gly Asp Thr Val Ala Ser Leu Lys Val Glu Lys  
 35 40 45  
 Arg Thr Lys Asn His Ile Leu Met Thr Gly Gly Ala Asp Tyr Lys Ile

50                      55                      60  
 Ser Ala Gly Pro Asp Asp Ser Met Cys Lys Tyr Leu Lys Ser Arg Cys  
 65                      70                      75                      80  
 Tyr Ala Val Gln Ala Asp Thr Ser Leu Tyr Val Asn Cys Lys Arg Leu  
                     85                      90                      95  
 Arg Tyr Lys Lys Phe Arg Phe Gly Gly Trp Tyr Ala Pro Ala Leu Arg  
                     100                      105                      110  
 Ile Gly Asp His Ile Tyr Phe Ser Ala Ile Pro Leu Gly Ser Val Ala  
                     115                      120                      125  
 Ala Gly Ser Asp Ala Thr Met Asp Val Met Leu Gly Gly Gln Phe Gly  
                     130                      135                      140  
 Asp Ala Ile Ala Ala Ser Ala Leu Ile Ser Lys Arg Val Tyr Tyr Glu  
 145                      150                      155                      160  
 Ile Asp Pro Glu Thr Asn Lys Val Gly Phe Val Gly Lys Glu Arg Met  
                     165                      170                      175  
 Glu Glu Leu Leu Gly Gly His Pro Asp Trp Lys Ala Ala Tyr Leu Asn  
                     180                      185                      190  
 Glu Asn Ser Glu Ser Ala Lys Val Thr Asp Lys Tyr Leu Arg Leu Leu  
                     195                      200                      205  
 Lys Ala Glu Glu Lys  
 210

<210> 7722

<211> 309

<212> PRT

<213> B.fragilis

<400> 7722

Asn Leu Asn Met Lys Arg Cys Phe Gln Leu Val Ala Leu Leu Ala Val  
 1                      5                      10                      15  
 Val Leu Leu Gly Ser Cys Thr Gly Gly Lys Asp Lys Ser Ala Ala Glu  
                     20                      25                      30  
 Lys Thr Glu Glu Lys Pro Lys Val Lys Leu Ala Asp Val Thr Ala Arg  
                     35                      40                      45  
 Pro Val Glu Gln Ile Gln Glu Tyr Thr Ala Thr Val Glu Ala Glu Val  
                     50                      55                      60  
 Lys Asn Asn Ile Ala Pro Ser Ser Pro Val Arg Ile Asp Lys Ile Phe  
 65                      70                      75                      80  
 Val Glu Val Gly Asp His Val Ser Lys Gly Gln Lys Leu Val Gln Met  
                     85                      90                      95  
 Asp Ala Ala Asn Leu Lys Gln Thr Lys Leu Gln Leu Asp Asn Gln Glu  
                     100                      105                      110  
 Val Glu Phe Asn Arg Ile Asp Glu Leu Tyr Lys Val Gly Gly Ala Ser  
                     115                      120                      125  
 Lys Ser Glu Trp Asp Ala Ala Lys Met Ala Tyr Asp Val Lys Lys Thr  
                     130                      135                      140  
 Ala Tyr Gln Asn Leu Leu Glu Asn Thr Ser Leu Leu Ser Pro Ile Ser  
 145                      150                      155                      160  
 Gly Val Val Thr Ala Arg Asn Tyr Asp Ser Gly Asp Met Tyr Ser Gly  
                     165                      170                      175  
 Gly Asn Pro Val Leu Thr Val Glu Lys Ile Thr Pro Val Lys Leu Leu  
                     180                      185                      190  
 Ile Asn Val Ser Glu Val Tyr Phe Thr Lys Val Lys Lys Gly Ala Pro  
                     195                      200                      205  
 Val Asn Val Lys Leu Asp Val Tyr Gly Asp Glu Ala Phe Glu Gly Lys  
                     210                      215                      220  
 Ile Ser Leu Ile Tyr Pro Thr Ile Asp Pro Ser Thr Arg Thr Phe Gln  
 225                      230                      235                      240  
 Val Glu Ile Gln Leu Pro Asn Gln Asn Gln Lys Val Arg Pro Gly Met

245 250 255  
 Phe Ala Arg Ala Ser Leu Asn Phe Gly Thr Glu Glu Asn Val Val Val  
 260 265 270  
 Pro Asp Leu Ala Ile Val Lys Gln Ala Gly Ala Arg Arg Pro Leu Cys  
 275 280 285  
 Val Cys Ile Gln Gly Trp Lys Ser Asp Ile Gln Gln Ser Gly Thr Gly  
 290 295 300  
 Thr Ser His Gly Gly  
 305

<210> 7723

<211> 453

<212> PRT

<213> B.fragilis

<400> 7723

Asn Tyr Cys Met Asn Lys Met Lys Cys Phe Leu Ser Lys Lys Met Leu  
 1 5 10 15  
 Leu Ala Val Val Val Leu Leu Ser Val Gly Tyr Val Gln Ala Gln Glu  
 20 25 30  
 Ala Lys Asp Ile Val Leu Leu Thr Leu Asp Lys Ala Leu Glu Ile Ala  
 35 40 45  
 Leu Ser Glu Asn Pro Thr Met Lys Val Ala Gly Gln Glu Ile Gln Leu  
 50 55 60  
 Lys Lys Glu Ala Lys Lys Glu Ala Tyr Gly Gly Leu Phe Pro Glu Val  
 65 70 75 80  
 Ser Leu Thr Gly Ser Tyr Ser Arg Thr Leu Lys Lys Gln Thr Met Val  
 85 90 95  
 Met Asp Phe Gly Gly Glu Ser Gln Thr Ile Gln Val Gly Ser Asp Asn  
 100 105 110  
 Ser Tyr Asn Gly Gly Leu Asn Val Ser Leu Pro Val Phe Ala Pro Thr  
 115 120 125  
 Leu Tyr Lys Ser Ile Asn Leu Thr Lys Thr Asp Val Glu Leu Ala Val  
 130 135 140  
 Glu Lys Ala Arg Ser Ser Lys Leu Asp Leu Val Asn Gln Val Thr Lys  
 145 150 155 160  
 Ala Tyr Tyr Gln Leu Leu Leu Ala Gln Asp Ser Tyr Lys Val Leu Leu  
 165 170 175  
 Gln Ser Tyr Ala Gln Ala Glu Ala Asn Tyr Glu Val Val Lys Ala Lys  
 180 185 190  
 Tyr Glu Gln Gly Thr Val Ser Glu Tyr Asp Lys Ile Arg Ala Asp Val  
 195 200 205  
 Gln Val Arg Ser Leu Lys Pro Ser Val Val Ser Ala Gly Asn Gly Val  
 210 215 220  
 Asn Leu Ala Arg Leu Gln Leu Gln Val Leu Met Gly Met Asp Thr Glu  
 225 230 235 240  
 Val Glu Ile Ala Ala Asp Gly Asn Leu Lys Asp Tyr Glu Met Val Met  
 245 250 255  
 Phe Arg Arg Gln Met Glu Ser Asn Gln Leu Asn Leu Asn Asn Ser  
 260 265 270  
 Asp Leu Lys Gln Leu Asp Leu Asn Ala Asp Leu Leu Lys Lys Thr Leu  
 275 280 285  
 Ala Val Gln Arg Thr Asn Phe Met Pro Thr Leu Ala Ala Ser Phe Asn  
 290 295 300  
 Tyr Ser Tyr Thr Ser Leu Asn Asn Asp Phe Lys Met Ser His Tyr Lys  
 305 310 315 320  
 Trp Phe Pro Tyr Ser Thr Val Gly Leu Ser Leu Ser Ile Pro Leu Phe  
 325 330 335  
 Lys Ala Ser Asn Phe Thr Lys Val Lys Gln Thr Lys Ile Gln Met Gln

340 345 350  
 Gln Leu Ala Glu Asn Arg Thr Asn Val Tyr Arg Gln Leu Thr Met Gln  
 355 360 365  
 Ala Thr Ser Tyr Leu Asp Asn Met Ala Ala Ser Thr Glu Gln Val Val  
 370 375 380  
 Ser Asn Lys Glu Gly Ile Val Gln Ala Glu Lys Gly Arg Leu Ile Ala  
 385 390 395 400  
 Gln Lys Arg Tyr Glu Val Gly Lys Gly Thr Ile Leu Glu Leu Asn Asp  
 405 410 415  
 Ser Glu Val Ala Leu Thr Gln Ala Gln Leu Thr Tyr Asn Gln Ser Ile  
 420 425 430  
 Tyr Asp Tyr Leu Val Ala Lys Ala Asp Leu Asp Gln Val Leu Gly Arg  
 435 440 445  
 Glu Glu Val Thr Glu  
 450

<210> 7724  
 <211> 159  
 <212> PRT  
 <213> B.fragilis

<400> 7724  
 Phe Ser Ala Ile Ala Met Ala Glu Leu Gly Asn Ile Ser Glu Arg Arg  
 1 5 10 15  
 Val Ala Pro Val Asn Tyr Gly Val Ala Cys Leu Pro Glu Phe Leu Val  
 20 25 30  
 Ala Asn Pro Gly Leu Asn Ser Gly Phe Met Ile Pro Gln Tyr Ala Ala  
 35 40 45  
 Ala Ser Met Val Ser Gln Asn Lys Met Tyr Cys Tyr Ala Ala Ser Ser  
 50 55 60  
 Asp Ser Ile Val Ser Ser Asn Gly Gln Glu Asp His Val Ser Met Gly  
 65 70 75 80  
 Ala Asn Ala Ala Thr Lys Leu Phe Arg Ile Met Asp Asn Leu Glu His  
 85 90 95  
 Ile Leu Ala Ile Glu Leu Met Asn Ala Gln Gly Ile Glu Phe Arg  
 100 105 110  
 Arg Pro Ala Lys Thr Ser Pro Ile Leu Glu Arg Tyr Leu Ala Ala Tyr  
 115 120 125  
 Arg Lys Glu Val Pro Phe Val Lys Asp Asp Ile Val Met Tyr Lys Glu  
 130 135 140  
 Ile His Lys Thr Val Ala Phe Leu Asn Arg Thr Arg Ser Glu Tyr  
 145 150 155

<210> 7725  
 <211> 525  
 <212> PRT  
 <213> B.fragilis

<400> 7725  
 Cys Val Arg Ile Thr Tyr Ile Ile Cys Leu Lys Ala Ile Arg Phe Arg  
 1 5 10 15  
 Glu Asn Tyr Tyr Met Lys Pro Leu Leu Lys Pro Ile Met Asn Met Phe  
 20 25 30  
 Pro Ile Asp Ile Asp Phe Ser Arg Leu Leu Glu Ala Phe Lys Tyr Asn  
 35 40 45  
 Pro Asp Ala Pro Met Ile Phe Ser Ser Gly Ile Phe Leu Trp Leu Phe  
 50 55 60  
 Ala Ala Phe Met Val Ile Tyr Thr Leu Leu Gln His Arg Asn Thr Val  
 65 70 75 80

Arg Ile Leu Phe Val Ala Leu Phe Ser Tyr Tyr Phe Tyr Tyr Lys Ser  
 85 90 95  
 Ser Gly Thr Tyr Phe Phe Leu Leu Ala Ile Val Thr Val Thr Asp Phe  
 100 105 110  
 Met Ile Ala Trp Leu Met Asp Arg Thr Asp Val Arg Trp Lys Arg Lys  
 115 120 125  
 Phe Cys Val Val Leu Ser Val Ser Val Asn Leu Gly Leu Leu Cys Tyr  
 130 135 140  
 Phe Lys Tyr Thr Asn Phe Leu Gly Gly Val Ile Ala Ser Leu Met Gly  
 145 150 155 160  
 Gly Glu Phe Thr Ala Leu Asp Ile Phe Leu Pro Val Gly Ile Ser Phe  
 165 170 175  
 Phe Thr Phe Gln Ser Leu Ser Tyr Thr Ile Asp Val Tyr Arg Lys Glu  
 180 185 190  
 Ile Lys Pro Leu Thr Ser Leu Leu Asp Tyr Ala Phe Tyr Val Ser Phe  
 195 200 205  
 Phe Pro Gln Leu Val Ala Gly Pro Ile Val Arg Ala Arg Asp Phe Ile  
 210 215 220  
 Pro Gln Ile Arg Lys Pro Leu Tyr Val Ser Gln Glu Met Phe Gly Arg  
 225 230 235 240  
 Gly Ile Phe Leu Ile Val Ala Gly Leu Phe Lys Lys Ala Val Ile Ser  
 245 250 255  
 Asp Tyr Ile Ser Ile Asn Phe Val Glu Arg Ile Phe Asp Asn Pro Thr  
 260 265 270  
 Leu Tyr Ser Gly Val Glu Asn Leu Met Gly Leu Tyr Gly Tyr Ala Leu  
 275 280 285  
 Gln Ile Tyr Cys Asp Phe Ser Gly Tyr Ser Asp Met Ala Ile Gly Ile  
 290 295 300  
 Ala Leu Leu Leu Gly Phe His Phe Asn Leu Asn Phe Asn Ser Pro Tyr  
 305 310 315 320  
 Lys Ser Ala Ser Ile Thr Glu Phe Trp Arg Arg Trp His Ile Ser Leu  
 325 330 335  
 Ser Ser Trp Leu Arg Asp Tyr Leu Tyr Ile Ser Leu Gly Gly Asn Arg  
 340 345 350  
 His Gly Lys Phe Arg Gln Tyr Leu Asn Leu Ile Ile Thr Met Phe Leu  
 355 360 365  
 Gly Gly Leu Trp His Gly Ala Ser Trp Asn Phe Val Leu Trp Gly Thr  
 370 375 380  
 Phe His Gly Val Ala Leu Ala Leu His Lys Ala Trp Met Ser Ile Ile  
 385 390 395 400  
 Gly Arg Lys Lys Gly Glu Thr Ser His Gly Ile Arg Arg Val Leu Gly  
 405 410 415  
 Val Ile Ile Thr Phe His Phe Val Cys Phe Cys Trp Ile Phe Phe Arg  
 420 425 430  
 Asn Ala Asp Phe His Asn Ser Met Asp Met Leu Asn Gln Ile Phe Thr  
 435 440 445  
 Ala Phe Arg Pro Gln Leu Phe Pro Gln Leu Ile Glu Gly Tyr Trp Arg  
 450 455 460  
 Val Phe Ala Leu Met Ala Val Gly Phe Leu Leu His Phe Ala Pro Asp  
 465 470 475 480  
 Ser Trp Glu Asn Ala Val Cys Arg Gly Val Ile Lys Leu Pro Phe Leu  
 485 490 495  
 Gly Lys Ala Ile Val Met Val Ala Met Ile Tyr Leu Val Ile Gln Met  
 500 505 510  
 Lys Ser Ser Glu Ile Gln Pro Phe Ile Tyr Phe Gln Phe  
 515 520 525

&lt;210&gt; 7726

&lt;211&gt; 63

<212> PRT  
 <213> B.fragilis

<400> 7726

Ser	Lys	Leu	Val	Pro	Gly	Asp	Arg	Tyr	Val	Tyr	Val	Tyr	Lys	Asp	Gly
1				5					10					15	
Lys	Val	Thr	Tyr	Asn	Lys	Val	Glu	Leu	Gly	Arg	Arg	Met	Gly	Ala	Glu
		20					25						30		
Tyr	Glu	Leu	Lys	Ser	Gly	Val	Pro	Asn	Asn	Ser	Gln	Val	Val	Ile	Ala
		35					40					45			
Gly	Gln	Thr	Arg	Leu	Ile	Asn	Gly	Thr	Glu	Val	Glu	Val	Glu	Lys	
	50					55					60				

<210> 7727  
 <211> 197  
 <212> PRT  
 <213> B.fragilis

<400> 7727

Ile	Lys	Glu	Thr	Ser	Ser	Ile	Ser	Arg	Met	Gln	Ser	Asn	His	Leu	Leu
1				5					10					15	
Lys	Thr	Gln	Lys	Ser	Phe	Ser	Asp	Ile	Tyr	Ser	Ile	Tyr	Tyr	Val	Arg
		20					25						30		
Met	Leu	Arg	Phe	Ser	Gln	Thr	Tyr	Val	Ile	Ala	Glu	Glu	Asp	Ala	Glu
		35					40					45			
Asn	Ile	Val	Gln	Asp	Thr	Phe	Leu	Tyr	Leu	Trp	Glu	His	Leu	Glu	Leu
	50					55					60				
Leu	Glu	Asp	Ile	Asp	His	Leu	Asp	Ala	Phe	Leu	Phe	Thr	Leu	Ile	Lys
65					70					75					80
Asn	Arg	Cys	Leu	Asn	Phe	Leu	Lys	His	Gln	Ser	Tyr	Ile	Gln	Ala	Lys
			85						90					95	
Thr	Cys	Ser	Leu	Lys	Ala	Asp	Glu	Glu	Leu	Glu	Ser	Gln	Leu	Asn	Leu
			100					105						110	
Tyr	Ala	Leu	Glu	Gln	Phe	Asp	Glu	Ala	Val	Ser	Ser	Ile	Ser	Glu	Val
	115						120					125			
Glu	Asn	Leu	Leu	Ser	Arg	Thr	Met	Gln	Lys	Leu	Pro	Glu	Arg	Cys	Arg
	130					135					140				
Glu	Ile	Phe	Leu	Leu	Ser	Arg	Ile	Glu	Gly	Leu	Lys	Tyr	Lys	Glu	Ile
145					150					155					160
Ala	Glu	Arg	Leu	Asp	Ile	Ser	Val	Asn	Thr	Val	Glu	Asn	Gln	Ile	Ser
			165						170					175	
Ile	Ala	Leu	Arg	Lys	Leu	Arg	Ser	Glu	Leu	Lys	Glu	Tyr	Leu	Pro	Leu
		180						185						190	
Leu	Val	Phe	Ile	Ile											
			195												

<210> 7728  
 <211> 77  
 <212> PRT  
 <213> B.fragilis

<400> 7728

Gln	Lys	Val	Lys	Ser	Ser	Asn	Arg	Lys	Arg	Lys	Asn	Lys	Arg	Gly	Lys
1				5					10					15	
Arg	Ile	Glu	Asn	Glu	Gly	Asn	Arg	Glu	Lys	Arg	Gly	Tyr	Phe	Leu	Gly
		20						25					30		
Lys	Gly	Ile	Ser	Ala	Gly	Pro	Lys	Gly	Ile	Val	Val	Ile	Lys	Ala	Ser
		35					40					45			
Met	Gly	Ala	Gly	Asn	Phe	Lys	Lys	Gln	Gly	Trp	Glu	Trp	Lys	Gln	Glu

50 55 60  
 Glu Leu Thr Ile Lys Pro His Arg Thr Leu Leu Lys Asn  
 65 70 75

<210> 7729  
 <211> 811  
 <212> PRT  
 <213> B.fragilis

<400> 7729

Thr Tyr Asp Lys Val Met Lys Lys Asn Leu Leu Gln Lys Trp Tyr Val  
 1 5 10 15  
 His Gln Gln Leu Glu Leu Thr His Ile Ile Arg Ile Met Lys Leu Ser  
 20 25 30  
 Val Phe Phe Ile Phe Val Phe Leu Phe Gln Leu Gln Ala Gly Asn Val  
 35 40 45  
 Lys Ser Gln Glu Val Arg Val Thr Leu Ser Lys Ser Ser Leu Thr Phe  
 50 55 60  
 Gly Glu Leu Met Arg Glu Ile Glu Lys Gln Thr Asn Tyr Leu Phe Met  
 65 70 75 80  
 Tyr Arg Asp Ala Glu Ile Asp Leu Ser Gln Lys Ile Glu Val Lys Asn  
 85 90 95  
 Thr Ser Ala Thr Val Lys Glu Ile Leu Thr Thr Ala Leu Arg Asn Lys  
 100 105 110  
 Lys Leu Thr Tyr Lys Phe Ser Asn Asn Tyr Ile Ser Leu Tyr Val Asp  
 115 120 125  
 Lys Glu Lys Ala Pro Glu Thr Met Val Thr Gln Gln Glu Arg Lys Ile  
 130 135 140  
 Lys Ile Lys Gly Val Val Ile Asp Gln Val Gly Glu Pro Ile Ile Gly  
 145 150 155 160  
 Ala Asn Ile Ser Leu Lys Gly Gln Pro Gly Thr Gly Asp Ile Thr Asp  
 165 170 175  
 Ile Glu Gly Asn Phe Thr Leu Glu Val Pro Glu Lys Ala Val Leu Val  
 180 185 190  
 Ile Ser Tyr Ile Gly Tyr Leu Thr Gln Glu Ile Pro Val Asn Gly Lys  
 195 200 205  
 Ala Ser Phe Asn Ile Gln Met Lys Glu Asp Thr Lys Thr Leu Asp Glu  
 210 215 220  
 Val Val Val Val Gly Tyr Gly Ser Gln Lys Lys Gln Thr Val Thr Ala  
 225 230 235 240  
 Ser Ala Ser Thr Leu Lys Val Ser Ser Leu Lys Asn Val Pro Thr Ala  
 245 250 255  
 Asn Leu Ala Ser Ser Leu Gly Gly Arg Val Ser Gly Val Leu Ile Gln  
 260 265 270  
 Gln Thr Gly Gly Glu Ala Gly Tyr Asp Asp Pro Thr Ile Ile Ile Arg  
 275 280 285  
 Gly Ser Ser Ser Pro Thr Ser Ser Ser Pro Leu Ile Val Val Asp Gly  
 290 295 300  
 Ile Ile Gly Arg Ser Met Ser Gln Leu Asp Pro Ser Glu Ile Glu Ser  
 305 310 315 320  
 Met Thr Val Leu Lys Asp Ala Ser Ala Val Ala Pro Tyr Gly Ala Arg  
 325 330 335  
 Gly Ala Asn Gly Val Ile Leu Ile Thr Thr Lys Arg Gly Lys Ser Gly  
 340 345 350  
 Lys Ala Gln Val Asp Tyr Asn Phe Lys Ile Gly Phe Gly Thr Pro Thr  
 355 360 365  
 Arg Met Pro Glu Ile Ala Ser Tyr Asp His Ala Arg Phe Met Asn  
 370 375 380  
 Asp Ala Trp Arg Asn Lys Glu Met Asp Leu Gly Glu Asp Pro Gly Met



385 390 395 400  
 Tyr Gly Ile Tyr Thr Glu Glu Glu Leu Gln Lys Phe Arg Asp Gly Ser  
 405 410 415  
 Asp Pro Tyr Gly Tyr Pro Asn Thr Asp Trp Asn Lys Glu Val Leu Leu  
 420 425 430  
 Pro Arg Ala Trp Gln Gln Met His Ser Leu Thr Ala Ser Gly Gly Ser  
 435 440 445  
 Asp Lys Val Lys Tyr Phe Ala Gly Phe Gly Tyr Val Lys Gln Asp Ala  
 450 455 460  
 Leu Tyr Gly Asp Thr Arg Thr Asn Lys Ser Thr Ser Gly Phe Asn Arg  
 465 470 475 480  
 Tyr Asn Ala Arg Val Asn Ile Asp Ala Asn Ile Val Asp Lys Tyr Leu  
 485 490 495  
 Asn Leu Ser Ala Asp Met Ala Tyr Arg Gln Glu Asp Arg Asn Ser Ile  
 500 505 510  
 Ala Gly Ser Thr Ser Asp Val Phe Asn Asn Met His Arg Asn Pro Gln  
 515 520 525  
 Thr Asp Pro Gly Arg Phe Pro Asp Gly Asn Leu Gly Lys Val Ser Leu  
 530 535 540  
 Gly Val Asn Pro Ile Gly Leu Ala Thr Glu Gly Gly Trp Val Lys Asp  
 545 550 555 560  
 Arg Lys Ser Val Leu Asn Thr Arg Phe Met Leu Asp Phe Asn Val Pro  
 565 570 575  
 Gly Leu Glu Gly Leu Asn Leu Lys Gly Ile Phe Ser Tyr Asp Lys Ile  
 580 585 590  
 Phe Asn Ser Ile Lys Arg Trp Thr Thr Pro Val Asp Phe Tyr Val Trp  
 595 600 605  
 Asn Lys Ile Thr Gly Glu Tyr Asp Gly His Ser Pro Asn Arg Glu Gly  
 610 615 620  
 Ala Glu Leu Lys Gln Thr Tyr Ser Thr Ser Gln Ala Met Thr Phe Glu  
 625 630 635 640  
 Phe Gln Ala Ala Tyr Asn Lys Thr Ile Ala Gln Asp His Gln Leu Gly  
 645 650 655  
 Ala Leu Phe Val Phe Ser Arg Ser Glu Gly Ala Asp Glu Asn Phe Trp  
 660 665 670  
 Ala Ser Arg Thr Lys Tyr Arg Ile Tyr Ser Ile Gln Gln Leu Phe Ala  
 675 680 685  
 Gly Pro Asp Lys Asp Lys Asp Asn Ser Gly Ser Ala Ser Glu Thr Gly  
 690 695 700  
 Lys Val Gly Ser Val Phe Arg Leu Thr Tyr Asn Tyr Lys Glu Lys Tyr  
 705 710 715 720  
 Met Leu Glu Ala Asn Gly Arg Leu Asp Gly Ser Glu Lys Phe Pro Lys  
 725 730 735  
 Ser Lys Arg Tyr Gly Phe Phe Pro Ser Val Ser Ala Ala Trp Arg Ile  
 740 745 750  
 Ser Ala Glu Pro Ile Met Glu Pro Phe Ser Gly Val Leu Ser Asn Leu  
 755 760 765  
 Lys Leu Arg Thr Ser Trp Gly Arg Ala Gly Thr Asp Asn Ile Gly Gln  
 770 775 780  
 Phe Gln Tyr Met Ser Ala Tyr Gly Thr Gly Gly Asp Ala Val Phe Gly  
 785 790 795 800  
 Arg Ser Glu Ser Gly Asn Ser Pro Gly Ile His  
 805 810

<210> 7730  
 <211> 346  
 <212> PRT  
 <213> B.fragilis

&lt;400&gt; 7730

Tyr Phe Phe Cys Ile Ser Phe Gly Gly Lys Cys Ile Leu Asp Cys Leu  
 1 5 10 15  
 Tyr Tyr Lys Thr Thr Gln Gly Thr Met Asn Asp Glu Leu Glu Lys Tyr  
 20 25 30  
 Phe Ala Gly Thr Leu Ser Ala Thr Glu Lys Thr Glu Phe Leu Asn Lys  
 35 40 45  
 Leu Arg Asp Asn Pro Glu Ala Lys Lys Glu Phe Ala Arg Met Lys Ala  
 50 55 60  
 Val Trp Ala Val Ser Gly Leu Met Ala Gln Glu Gly Asp Pro Gln Lys  
 65 70 75 80  
 Thr Val Arg Gly Ile Ala Glu Phe Asp Lys Arg Leu Lys Arg Arg Ser  
 85 90 95  
 Val His Arg Phe Arg Ile Gly Phe Phe Lys Tyr Ala Ala Met Ile Val  
 100 105 110  
 Leu Leu Ile Ser Thr Thr Trp Phe Ile Ala Asn Trp Tyr Thr Gln Lys  
 115 120 125  
 Glu Gln Lys Lys Gln Tyr Thr Glu Ile Asn Val Pro Lys Gly Gln Arg  
 130 135 140  
 Val Asn Met Thr Leu Pro Asp Gly Thr Ser Val Trp Leu Ser Pro Gln  
 145 150 155 160  
 Ser Lys Ile Lys Ile Pro Asn Glu Phe Asn Arg Lys Asn Arg Met Val  
 165 170 175  
 Glu Leu Asn Gly Glu Gly Tyr Phe Glu Val Thr Lys Asn Ala Lys Lys  
 180 185 190  
 Pro Phe Ile Val Lys Thr Gln Leu Phe Asn Ile Gln Val Leu Gly Thr  
 195 200 205  
 Arg Phe Asn Val Phe Ala Tyr Ala Gly Lys Glu Ser Lys Phe Glu Thr  
 210 215 220  
 Cys Leu Val Glu Gly Arg Val Leu Val Tyr Asn Lys Asn Asn Lys Asn  
 225 230 235 240  
 Glu Lys Val Tyr Leu Asn Pro His Glu Lys Val Ser Leu Val Asn Asn  
 245 250 255  
 Arg Met Val Val Ser Thr Ser Asn Phe Asp Asn Glu Glu Tyr Leu Lys  
 260 265 270  
 Ser Gly Ile Phe Ser Phe Arg Ser Lys Pro Phe Gly Glu Ile Leu Ser  
 275 280 285  
 Tyr Leu Thr Leu Trp Tyr Asn Val Gln Phe Asn Phe Thr Gly Asp Val  
 290 295 300  
 Lys Leu Asp Glu Arg Ile Ser Gly Lys Ile Arg Gln Ser Glu Asp Val  
 305 310 315 320  
 Asp Asn Ile Leu Ile Ala Leu Gln Gly Val Tyr Pro Phe Lys Phe Lys  
 325 330 335  
 Lys Thr Asp Asp Glu His Tyr Glu Ile Tyr  
 340 345

&lt;210&gt; 7731

&lt;211&gt; 381

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7731

Glu Leu His Gly Asp Ala Pro Glu Gln Thr Thr Ser Val Asn Ser Ser  
 1 5 10 15  
 Ile Cys Pro Leu Met Val Pro Ala Val Met Pro Tyr Leu Ala Gly Gln  
 20 25 30  
 Asn Pro Glu Ile Ala Pro Gly Tyr Thr Glu Thr Arg Phe Pro Asn Pro  
 35 40 45  
 Asn Ile Thr Trp Glu Thr Ser Glu Met Phe Asn Ile Gly Ile Asp Ala

50                      55                      60  
 Ser Phe Phe Asn Gly Lys Leu Asn Leu Glu Ala Asp Trp Phe Tyr Lys  
 65                      70                      75                      80  
 Lys Thr Asn Asp Ile Leu Arg Glu Arg Thr Asp Met Pro Ala Ile Leu  
                     85                      90                      95  
 Gly Tyr Lys Leu Pro Ala Ala Asn Val Gly Lys Val Asp Asn Arg Gly  
                     100                      105                      110  
 Ile Asp Leu Asn Ile Thr His Arg Asn His Leu Arg Asp Phe Asn Tyr  
                     115                      120                      125  
 Ser Ile Ala Gly Asn Leu Thr Trp Ala Arg Asn Lys Val Ile Asp Leu  
                     130                      135                      140  
 Leu Glu Pro Ala Gly Glu Lys Asn Asn Pro Arg Gln Arg Ser Thr Gly  
 145                      150                      155                      160  
 His Ser Met Ser Gln Tyr Phe Gly Tyr Glu Ala Leu Gly Leu Phe Gln  
                     165                      170                      175  
 Ser Asp Glu Glu Ala Asn Asn Trp Pro Gln Pro Gln Phe Gly Lys Ala  
                     180                      185                      190  
 Lys Ala Gly Asp Ile Lys Tyr Lys Asp Gln Asn Gly Asp Gly Ile Ile  
                     195                      200                      205  
 Asp Ala Glu Asp Glu Ile Ala Ile Gly Arg Ser Asn Tyr Pro Glu Leu  
 210                      215                      220  
 Val Tyr Gly Leu Asn Leu Asn Ala Glu Trp Lys Gly Phe Asp Ile Thr  
 225                      230                      235                      240  
 Phe Phe Phe Gln Gly Ala Ala Leu Ala Asp Phe Tyr Tyr Asn Gly Tyr  
                     245                      250                      255  
 Leu Ala Phe Pro Tyr Ile Glu Gly Arg Gly Gly Ala Leu Leu Glu His  
                     260                      265                      270  
 His Ile Gly Asn Thr Trp Thr Pro Glu Asn Pro Lys Ala Glu Phe Pro  
                     275                      280                      285  
 Arg Leu Tyr Tyr Gly Gly Asn Ala Asn Asn Gln Leu Phe Ser Ser Phe  
                     290                      295                      300  
 Trp Met Arg Asn Gly Ser Tyr Leu Arg Leu Lys Asn Val Glu Ile Gly  
 305                      310                      315                      320  
 Tyr Asp Phe Lys Lys Leu Leu Leu Ser Lys Val Ser Glu Ile Gln Gly  
                     325                      330                      335  
 Leu Arg Leu Tyr Phe Ser Gly Ser Asn Leu Leu Thr Trp Ser Gln Ile  
                     340                      345                      350  
 Lys Tyr Phe Asp Pro Glu Leu Arg Ser Thr Asp Gly Ser Ala Tyr Pro  
                     355                      360                      365  
 Gln Met Lys Thr Phe Val Phe Gly Ala Asn Ile Thr Phe  
                     370                      375                      380

&lt;210&gt; 7732

&lt;211&gt; 167

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7732

Phe Phe Phe Ile Phe Val Leu Met Glu Lys Tyr Tyr Ser Thr Asn Cys  
 1                      5                      10                      15  
 Pro Ile Asn Thr Ile Thr Ile Ile Lys Thr Ile Ile Val Ala Met Leu  
                     20                      25                      30  
 Phe Ile Ile Ala Ala Ile Ile Val Phe Ala Ser Gly Gly Tyr Trp Leu  
                     35                      40                      45  
 Gly Ile Ser Ile Ile Leu Leu Leu Val Ile Met Val Val Thr Tyr  
                     50                      55                      60  
 Phe Cys Ile Pro Arg Lys Ile Ile Val Thr Asp Thr Asp Ile Val Leu  
 65                      70                      75                      80  
 Tyr Asn His Gly Phe Lys Arg Lys Ile Pro Lys Cys Asp Ile Leu Lys



Arg Tyr Lys Ser Ser Lys Asp Met Lys Ile Leu Leu Leu Gly Ser Gly

1		5		10		15									
Gly	Arg	Glu	His	Ala	Leu	Ala	Trp	Lys	Ile	Ala	Gln	Ser	Pro	Lys	Val
		20						25					30		
Glu	Lys	Leu	Phe	Ile	Ala	Pro	Gly	Asn	Ala	Gly	Thr	Gly	Glu	Val	Gly
		35					40						45		
Glu	Asn	Val	Asn	Ile	Lys	Ala	Thr	Asp	Phe	Ala	Ala	Leu	Gly	Ala	Phe
		50				55					60				
Ala	Leu	Glu	Glu	Ser	Ile	Asp	Met	Ile	Val	Val	Gly	Pro	Glu	Asp	Pro
65					70					75					80
Leu	Val	Glu	Gly	Ile	Tyr	Asp	His	Phe	Gln	Ser	Asn	Pro	Cys	Leu	Lys
				85					90					95	
Asn	Ile	Ala	Ile	Ile	Gly	Pro	Ser	Lys	Glu	Gly	Ala	Arg	Leu	Glu	Gly
		100						105					110		
Ser	Lys	Glu	Phe	Ala	Lys	Glu	Phe	Met	His	Arg	His	His	Ile	Pro	Thr
		115					120					125			
Ala	Arg	Tyr	Gln	Ser	Val	Thr	Ala	Asp	Thr	Leu	Asn	Glu	Gly	Leu	Ala
		130				135					140				
Phe	Leu	Glu	Thr	Leu	Glu	Ala	Pro	Tyr	Val	Leu	Lys	Ala	Asp	Gly	Leu
145					150					155					160
Cys	Ala	Gly	Lys	Gly	Val	Leu	Ile	Leu	Pro	Thr	Leu	Glu	Glu	Ala	Lys
				165					170					175	
Lys	Glu	Leu	Lys	Glu	Met	Leu	Gly	Gly	Met	Phe	Gly	Asn	Ala	Ser	Ala
			180					185					190		
Thr	Val	Val	Ile	Glu	Glu	Phe	Leu	Ser	Gly	Ile	Glu	Cys	Ser	Val	Phe
		195					200					205			
Val	Leu	Thr	Asp	Gly	Asp	His	Tyr	Lys	Val	Leu	Pro	Val	Ala	Lys	Asp
		210				215					220				
Tyr	Lys	Arg	Ile	Gly	Glu	Gly	Asp	Lys	Gly	Leu	Asn	Thr	Gly	Gly	Met
225				230						235					240
Gly	Ser	Val	Thr	Pro	Val	Pro	Phe	Ala	Asp	Glu	Val	Phe	Met	Glu	Lys
				245					250					255	
Val	Arg	Thr	Arg	Ile	Ile	Glu	Pro	Thr	Val	Asn	Gly	Leu	Lys	Ala	Glu
			260					265					270		
Gly	Ile	Thr	Tyr	Lys	Gly	Phe	Ile	Phe	Leu	Gly	Leu	Ile	Asn	Val	Lys
		275				280						285			
Gly	Glu	Pro	Met	Val	Ile	Glu	Tyr	Asn	Val	Arg	Met	Gly	Asp	Pro	Glu
		290				295				300					
Thr	Glu	Ser	Val	Met	Leu	Arg	Ile	Gln	Ser	Asp	Leu	Val	Glu	Leu	Leu
305				310						315					320
Glu	Gly	Val	Ala	Glu	Gly	Asn	Leu	Asp	Ala	Arg	Ser	Leu	Val	Ile	Asp
				325					330					335	
Pro	Arg	Thr	Ala	Thr	Cys	Val	Met	Met	Val	Ser	Gly	Gly	Tyr	Pro	Glu
			340					345					350		
Ala	Tyr	Gln	Lys	Gly	Tyr	Ala	Ile	Asn	Gly	Leu	Glu	Ala	Ala	Arg	Ala
		355				360						365			
Thr	Asp	Ser	Ile	Leu	Phe	His	Ala	Gly	Thr	Ala	Met	Lys	Asp	Gly	Gln
		370				375					380				
Ala	Val	Thr	Ser	Gly	Gly	Arg	Val	Leu	Ala	Ile	Cys	Ser	Tyr	Gly	Asn
385				390						395					400
Asp	Lys	Ala	Asp	Ala	Leu	Ala	Gln	Cys	Tyr	Lys	Val	Ala	Asp	Met	Ile
				405					410					415	
Asp	Phe	Lys	Asp	Lys	Asn	Tyr	Arg	Arg	Asp	Ile	Gly	Phe	Asp	Leu	
			420					425					430		

&lt;210&gt; 7736

&lt;211&gt; 246

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7736

Leu Phe Leu Ser Val Tyr Asn Phe Val Asp Ser Asn Ile Pro Met Lys  
 1 5 10 15  
 Ala Ile Glu Ile Gln Lys Glu Leu Glu Thr Tyr Ile Asp Pro Val Lys  
 20 25 30  
 Arg Glu Tyr Leu Pro Gly Phe Phe Lys Thr Gly Lys Gly Gln Tyr Gly  
 35 40 45  
 Glu Gly Asp Arg Phe Leu Gly Ile Val Val Pro Ala Thr Arg Leu Val  
 50 55 60  
 Ala Lys Lys Tyr Lys Asn Ala Pro Phe Glu Val Met Ala Glu Leu Leu  
 65 70 75 80  
 Gln Ser Glu Trp His Glu Cys Arg Leu Cys Ala Leu Leu Met Met Val  
 85 90 95  
 Glu Arg Phe Lys Lys Ser Gly Gly Glu Glu Arg Glu Ala Ile Tyr Arg  
 100 105 110  
 Phe Tyr Leu Ser Gln Thr Glu Arg Ile Asn Asn Trp Asp Leu Val Asp  
 115 120 125  
 Leu Ser Ala Pro Tyr Ile Val Gly Glu Tyr Leu Lys Asp Lys Ser Arg  
 130 135 140  
 Asp Asp Leu Tyr Arg Leu Ala Glu Ser Thr Leu Leu Trp Asp Gln Arg  
 145 150 155 160  
 Ile Ala Val Val Ser Thr Val Thr Phe Ile Arg Asn Asn Asp Phe Ile  
 165 170 175  
 Asp Ile Leu Arg Leu Ser Glu Leu Leu Gln His Lys His Asp Leu  
 180 185 190  
 Met Arg Lys Ala Ile Gly Trp Met Leu Arg Glu Met Gly Lys Arg Asp  
 195 200 205  
 Lys Thr Leu Leu Leu Gln Phe Leu Asp Lys Tyr Ser Lys Val Met Pro  
 210 215 220  
 Arg Thr Met Leu Arg Tyr Ser Ile Glu Lys Leu Thr Asp Glu Glu Arg  
 225 230 235 240  
 Lys Leu Tyr Met Gly Arg  
 245

&lt;210&gt; 7737

&lt;211&gt; 65

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7737

Asp Phe Arg Ser Glu Arg Glu Thr Ile Ile Lys Met Ala Tyr Glu Met  
 1 5 10 15  
 Ile Leu Ala Ser Tyr Leu His Met Pro Ser Tyr Phe Leu Lys Thr Phe  
 20 25 30  
 Thr Glu Tyr Pro Val Val Trp Val Phe Val Ala Gly Pro Glu Ser Pro  
 35 40 45  
 Phe Phe Lys Val Ser Gly Leu Leu Ala Ser Asp Phe Ile Trp Gln Thr  
 50 55 60  
 Arg  
 65

&lt;210&gt; 7738

&lt;211&gt; 68

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7738

Thr Thr Leu Phe Arg Tyr Phe Leu Gly Leu Val Val Val Arg Ile Val  
 1 5 10 15

Phe Lys Glu Leu Ile Ser Met Ile Phe Arg His Tyr Leu Phe Ala Asn  
 20 25 30  
 Ile Thr Glu Ala Pro Lys Ser Arg Ser Asp Ile Glu Glu Asn Arg Glu  
 35 40 45  
 Met Ser Asn Trp Thr Ala Cys Pro Val Arg Val Leu Leu His Lys Lys  
 50 55 60  
 Asn Thr Ile Phe  
 65

<210> 7739

<211> 614

<212> PRT

<213> B.fragilis

<400> 7739

Ser Leu Cys Pro Phe Phe Met Asp Thr Asn Gln Glu Leu Lys Thr Ser  
 1 5 10 15  
 Glu Tyr Leu Lys Gly Ile Val Ser Asn Leu Pro Glu Arg Pro Gly Ile  
 20 25 30  
 Tyr Gln Tyr Leu Asn Ala Glu Gly Thr Ile Ile Tyr Val Gly Lys Ala  
 35 40 45  
 Lys Asn Leu Lys Arg Arg Val Tyr Ser Tyr Phe Ser Lys Glu His Gln  
 50 55 60  
 Pro Gly Lys Thr Arg Val Leu Val Ser Lys Ile Ala Asp Ile Arg Tyr  
 65 70 75 80  
 Ile Val Val Asn Ser Glu Glu Asp Ala Leu Leu Leu Glu Asn Asn Leu  
 85 90 95  
 Ile Lys Lys Tyr Lys Pro Arg Tyr Asn Val Leu Leu Lys Asp Asp Lys  
 100 105 110  
 Thr Tyr Pro Ser Ile Cys Val Gln Asn Glu Tyr Phe Pro Arg Val Phe  
 115 120 125  
 Lys Thr Arg Arg Ile Ile Arg Asn Gly Ser Ser Tyr Tyr Gly Pro Tyr  
 130 135 140  
 Ser His Ser Pro Ser Met His Ala Val Leu Asp Leu Ile Lys His Leu  
 145 150 155 160  
 Tyr Pro Leu Arg Thr Cys Asn Leu Asn Leu Ser Pro Glu Asn Ile Arg  
 165 170 175  
 Ala Gly Lys Phe Asn Val Cys Leu Glu Tyr His Ile Lys Asn Cys Ala  
 180 185 190  
 Gly Pro Cys Ile Gly Leu Gln Ser Glu Glu Tyr Leu Lys Asn Ile  
 195 200 205  
 Ala Glu Ile Lys Glu Ile Leu Lys Gly Asn Thr Gln Glu Ile Ser Arg  
 210 215 220  
 Leu Leu Tyr Glu Arg Met Gln Asp Leu Ala Ala Glu Met Lys Phe Glu  
 225 230 235 240  
 Glu Ala Gln Lys Val Lys Glu Lys Tyr Ala Leu Ile Glu Asn Tyr Arg  
 245 250 255  
 Ser Lys Ser Glu Val Val Ser Ser Val Leu His Asn Ile Asp Val Phe  
 260 265 270  
 Ser Ile Glu Glu Asp Gly Glu Lys Ser Ala Phe Ile Asn Tyr Leu His  
 275 280 285  
 Ile Thr Asn Gly Ala Ile Asn Gln Ala Phe Thr Phe Glu Tyr Lys Lys  
 290 295 300  
 Lys Leu Asn Glu Thr Lys Glu Glu Leu Leu Thr Leu Gly Ile Ile Glu  
 305 310 315 320  
 Met Arg Glu Arg Tyr Lys Ser Ala Ser Arg Glu Ile Ile Val Pro Phe  
 325 330 335  
 Asp Ile Glu Ile Glu Leu Asn Asp Val Thr Phe Thr Ile Pro Gln Arg  
 340 345 350

4051 7739 614 PRT B.fragilis 7739

Gly Asp Lys Lys Lys Leu Leu Glu Leu Ser Leu Leu Asn Val Lys Gln  
 355 360 365  
 Tyr Lys Ala Asp Arg Met Lys Gln Ala Glu Lys Leu Asn Pro Glu Gln  
 370 375 380  
 Arg Ser Met Arg Leu Met Lys Glu Ile Gln Gln Glu Leu His Leu Asp  
 385 390 395 400  
 Arg Leu Pro Met Gln Ile Glu Cys Phe Asp Asn Ser Asn Ile Gln Gly  
 405 410 415  
 Thr Asp Ala Val Ala Ala Cys Val Val Phe Lys Lys Ala Lys Pro Ser  
 420 425 430  
 Lys Ser Asp Tyr Arg Lys Tyr Asn Ile Lys Thr Val Val Gly Ala Asp  
 435 440 445  
 Asp Tyr Ala Ser Met Lys Glu Val Val Arg Arg Arg Tyr Gln Arg Ala  
 450 455 460  
 Ile Glu Glu Glu Ser Pro Leu Pro Asp Leu Ile Ile Thr Asp Gly Gly  
 465 470 475 480  
 Lys Gly Gln Met Glu Val Val Arg Gln Val Met Glu Glu Leu Gln Leu  
 485 490 495  
 Asp Ile Pro Ile Ala Gly Leu Ala Lys Asp Arg Lys His Arg Thr Ser  
 500 505 510  
 Glu Val Leu Phe Gly Phe Pro Pro Gln Thr Ile Gly Ile Lys Gln His  
 515 520 525  
 Ser Pro Leu Phe Arg Leu Leu Glu Gln Ile Gln Asp Glu Val His Arg  
 530 535 540  
 Phe Ala Ile Thr Phe His Arg Asp Lys Arg Ser Lys Arg Gln Val Ala  
 545 550 555 560  
 Ser Ala Leu Asp Asn Ile Lys Gly Ile Gly Glu Lys Thr Lys Thr Ala  
 565 570 575  
 Leu Leu Lys Glu Phe Lys Ser Val Lys Arg Ile Lys Glu Ala Thr Ile  
 580 585 590  
 Glu Glu Val Ser Ala Ile Ile Gly Glu Ser Lys Ala Lys Ile Ile Lys  
 595 600 605  
 Glu Gly Leu Asp Asn His  
 610

&lt;210&gt; 7740

&lt;211&gt; 288

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7740

Thr Arg Ile Pro Ile Thr Asn Leu Lys Gln Phe Met Asp Lys Glu Arg  
 1 5 10 15  
 Lys Pro His Lys His Thr Glu Ala Ala Thr Ser Ser Pro Leu Leu Ser  
 20 25 30  
 Ile Arg Gly Leu Ser Ala Ala Tyr Asp Gly Arg Thr Val Leu His Asp  
 35 40 45  
 Val Asp Leu Glu Val Tyr Glu His Asp Phe Leu Gly Ile Ile Gly Pro  
 50 55 60  
 Asn Gly Gly Gly Lys Thr Thr Leu Ile Lys Cys Ile Leu Gly Leu Leu  
 65 70 75 80  
 Arg Pro Thr Gly Gly Glu Ile Ile Lys Tyr His Glu Pro Leu Thr Thr  
 85 90 95  
 Gly Tyr Leu Pro Gln Tyr Asn Ser Ile Asp Arg Ser Phe Pro Ile Ser  
 100 105 110  
 Val Leu Glu Val Val Leu Ser Gly Leu Ser Ser Lys Lys Ser Leu Thr  
 115 120 125  
 Gly Arg Phe Asn Asp Arg His Arg Glu Lys Ala Arg Gln Val Ile His  
 130 135 140



Arg Met Gly Leu Glu Gly Leu Glu His Arg Ala Ile Gly Gln Leu Ser  
 145 150 155 160  
 Gly Gly Gln Leu Gln Arg Ala Leu Leu Gly Arg Ala Ile Ile Ser Asp  
 165 170 175  
 Pro Gln Leu Leu Ile Leu Asp Glu Pro Ser Thr Tyr Ile Asp Lys Arg  
 180 185 190  
 Phe Glu Ala Arg Leu Tyr Gln Leu Leu Ala Glu Ile Asn Arg Asp Cys  
 195 200 205  
 Ala Ile Ile Leu Val Ser His Asp Ile Gly Thr Val Leu Gln Gln Val  
 210 215 220  
 Lys Asn Ile Ala Cys Val Asn Glu Thr Leu Asp Tyr His Pro Ala Ala  
 225 230 235 240  
 Ser Val Asn Thr Glu Trp Leu Glu Arg Asn Phe Asn Cys Pro Ile Glu  
 245 250 255  
 Leu Leu Gly His Gly Thr Leu Pro His Arg Val Leu Gly Glu His Cys  
 260 265 270  
 His Cys His Glu Lys Ser Ser Asp Thr Pro His Pro Gln Thr Asp Lys  
 275 280 285

<210> 7741

<211> 530

<212> PRT

<213> B.fragilis

<400> 7741

Arg Asn Ser Pro Ile Ser Ile Trp Gly Ala Val Ser Thr Ile Val Arg  
 1 5 10 15  
 Lys His Cys Leu Met Ile Ser Gly Asn Thr Ile Asn His Lys Asn Asn  
 20 25 30  
 Met Ala Gly Leu Lys Ser Leu Val Lys Asp Thr Ala Leu Tyr Gly Leu  
 35 40 45  
 Ser Ser Met Val Gly Arg Phe Leu Asn Tyr Leu Leu Val Pro Leu Tyr  
 50 55 60  
 Thr Ala Val Leu Pro Ala Ala Ser Gly Gly Tyr Gly Val Val Thr Asn  
 65 70 75 80  
 Val Tyr Ala Trp Ala Gly Leu Ile Met Val Leu Leu Thr Phe Gly Met  
 85 90 95  
 Glu Thr Gly Phe Phe Arg Phe Ala Asn Lys Ser Glu Glu Asp Pro Val  
 100 105 110  
 Lys Val Tyr Ala Asn Ser Leu Ile Ser Val Gly Gly Ile Ser Leu Ile  
 115 120 125  
 Phe Ala Ile Leu Cys Leu Thr Phe Leu Gln Pro Val Ser His Leu Leu  
 130 135 140  
 Glu Tyr Gly Asp His Pro Asp Phe Ile Gly Met Met Ile Ile Val Met  
 145 150 155 160  
 Ala Leu Asp Ala Phe Leu Cys Ile Pro Phe Ala Tyr Leu Arg Phe Lys  
 165 170 175  
 Lys Arg Pro Ile Lys Phe Val Ala Ile Lys Phe Val Ser Ile Ile Ala  
 180 185 190  
 Asn Ile Val Leu Asn Leu Phe Phe Leu Leu Leu Cys Pro Trp Leu His  
 195 200 205  
 Glu His Phe Pro Ala Trp Val Asp Trp Phe Tyr Asn Pro Thr Tyr Leu  
 210 215 220  
 Val Gly Tyr Ile Phe Val Ser Asn Leu Ile Thr Thr Cys Leu Gln Leu  
 225 230 235 240  
 Phe Cys Leu Ile Pro Glu Leu Arg Gly Phe Ala Tyr Arg Val Asp Lys  
 245 250 255  
 Gln Leu Leu Lys Arg Met Leu Ile Tyr Ser Phe Pro Ile Leu Ile Phe  
 260 265 270

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Gly Leu Val Gly Ile Leu Asn Gln Thr Val Asp Lys Ile Ile Tyr Pro  
 275 280 285  
 Phe Leu Phe Ala Asp Arg Gln Glu Gly Leu Val Gln Leu Gly Ile Tyr  
 290 295 300  
 Gly Ala Ala Thr Lys Ile Ala Met Val Met Ala Met Phe Thr Gln Ala  
 305 310 315 320  
 Phe Arg Tyr Ala Tyr Glu Pro Phe Val Phe Gly Lys Gln Lys Glu Gly  
 325 330 335  
 Asp Asn Arg Arg Met Tyr Ala Gln Ala Met Lys Tyr Phe Leu Ile Phe  
 340 345 350  
 Ala Met Phe Ala Phe Leu Val Val Met Phe Tyr Leu Asp Leu Leu Arg  
 355 360 365  
 Tyr Met Val Ala Pro Asp Tyr Trp Ala Gly Leu Ser Val Val Ala Ile  
 370 375 380  
 Val Ile Gly Ala Glu Ile Phe Lys Gly Ile Tyr Phe Asn Leu Ser Phe  
 385 390 395 400  
 Trp Tyr Lys Leu Ile Asp Glu Thr Arg Trp Gly Ala Tyr Phe Ser Ile  
 405 410 415  
 Val Gly Cys Val Ile Ile Val Gly Met Asn Val Met Leu Val Pro Thr  
 420 425 430  
 Tyr Gly Phe Val Ala Ser Ala Trp Ala Ser Val Ala Gly Tyr Ala Val  
 435 440 445  
 Ile Thr Ile Leu Ser Tyr Trp Ile Gly Gln Lys Lys Tyr Pro Ile His  
 450 455 460  
 Tyr Asp Leu Lys His Leu Gly Thr Tyr Val Leu Phe Thr Ala Val Leu  
 465 470 475 480  
 Tyr Val Ile Gly Glu Trp Val Pro Ile Glu Asn Ile Val Leu Arg Leu  
 485 490 495  
 Ala Phe Arg Thr Val Leu Leu Leu Ile Phe Met Ala Tyr Val Val Arg  
 500 505 510  
 Lys Asp Leu Pro Leu Ser Gln Ile Pro Val Ile Asn Arg Ile Ile Lys  
 515 520 525  
 Lys Lys  
 530

<210> 7742  
 <211> 451  
 <212> PRT  
 <213> B.fragilis

<400> 7742  
 Ile Ser Ile Ala Phe Ile Gly Ile Phe Glu Ser Thr Lys Leu Tyr Thr  
 1 5 10 15  
 Asp Lys Asn Ser Gln Lys Ser Arg Asn Glu Trp Lys His Ile Leu Asn  
 20 25 30  
 Phe Val Gly Lys Leu Thr Gly Ile Phe Met Val Leu Asn Tyr Ile Trp  
 35 40 45  
 Ile Ala Phe Phe Val Ile Ala Phe Val Val Ala Val Cys Lys Leu Leu  
 50 55 60  
 Phe Phe Gly Asp Thr Gln Ile Phe Thr Glu Ile Ile Asn Ser Thr Phe  
 65 70 75 80  
 Asp Ser Ser Lys Thr Ala Phe Glu Ile Ser Leu Gly Leu Thr Gly Val  
 85 90 95  
 Leu Ser Leu Trp Leu Gly Val Met Lys Ile Gly Glu Asn Ser Gly Leu  
 100 105 110  
 Ile Asn Ala Leu Ser Arg Trp Leu Ser Pro Val Phe Cys Arg Leu Phe  
 115 120 125  
 Pro Asp Ile Pro Lys Gly His Pro Val Met Gly Ser Ile Phe Met Asn  
 130 135 140

Met Ser Ala Asn Met Leu Gly Leu Asp Asn Ala Ala Thr Pro Met Gly  
 145 150 155 160  
 Leu Lys Ala Met Lys Glu Leu Gln Glu Leu Asn Pro Lys Lys Asp Thr  
 165 170 175  
 Ala Ser Asn Pro Met Ile Met Phe Leu Val Ile Asn Thr Ser Gly Leu  
 180 185 190  
 Ile Ile Ile Pro Ile Ser Ile Met Val Tyr Arg Ala Gln Met Gly Ala  
 195 200 205  
 Ala Gln Pro Thr Asp Ile Phe Ile Pro Ile Leu Leu Ser Thr Phe Ile  
 210 215 220  
 Ser Thr Leu Val Gly Val Ile Ala Val Ser Ile Ser Gln Arg Ile Asn  
 225 230 235 240  
 Leu Ile Asn Lys Ala Ile Leu Thr Leu Met Gly Cys Leu Ser Leu Phe  
 245 250 255  
 Phe Gly Gly Ile Ile Tyr Leu Thr Thr Thr Leu Ser Arg Glu Glu Met  
 260 265 270  
 Gly Val Tyr Ser Thr Leu Ile Ala Asn Val Ile Leu Phe Ser Val Ile  
 275 280 285  
 Leu Leu Phe Ile Ile Ala Gly Ile Arg Lys Lys Ile Asn Val Tyr Asp  
 290 295 300  
 Ser Phe Val Glu Gly Ala Lys Glu Gly Phe Thr Thr Ala Val Arg Ile  
 305 310 315 320  
 Ile Pro Tyr Leu Val Ala Phe Leu Val Gly Ile Ala Val Phe Arg Thr  
 325 330 335  
 Ser Gly Ala Met Asp Ile Leu Val Gly Gly Ile Gly Ala Ile Val Glu  
 340 345 350  
 Phe Cys Gly Leu Asp Thr Gly Phe Val Gly Ala Leu Pro Thr Ala Leu  
 355 360 365  
 Met Lys Ser Leu Ser Gly Ser Gly Ala Asn Gly Leu Met Ile Asp Thr  
 370 375 380  
 Met Lys Gln Phe Gly Pro Asp Ser Phe Val Gly Arg Val Ser Cys Val  
 385 390 395 400  
 Val Arg Gly Ala Ser Asp Thr Thr Phe Tyr Ile Leu Ala Val Tyr Phe  
 405 410 415  
 Gly Ser Val Gly Ile Thr Lys Thr Arg Asn Ala Val Thr Cys Gly Leu  
 420 425 430  
 Ile Ala Asp Phe Ala Gly Ile Ile Ala Ala Ile Leu Ile Ser Tyr Leu  
 435 440 445  
 Phe Phe Phe  
 450

&lt;210&gt; 7743

&lt;211&gt; 159

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7743

Tyr Met Asp Ala Phe Ile Glu Thr Val Ser Gln Ile Leu Ile Asp Trp  
 1 5 10 15  
 Gly Tyr Pro Gly Leu Phe Ile Ser Ala Leu Leu Ala Gly Ser Ile Val  
 20 25 30  
 Pro Phe Ser Ser Glu Ile Val Leu Leu Gly Leu Val Lys Leu Gly Leu  
 35 40 45  
 Asp Pro Thr Leu Cys Leu Ile Ser Ala Ser Leu Gly Asn Thr Ala Gly  
 50 55 60  
 Gly Met Thr Cys Tyr Tyr Met Gly Arg Leu Gly Arg Ile Asp Trp Ile  
 65 70 75 80  
 Glu Lys Tyr Phe Lys Val Lys Lys Glu Lys Ile Asp Lys Met Gln Arg  
 85 90 95

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<210> 7744
<211> 408
<212> PRT
<213> B.fragilis
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<400>	7744															
Arg	Arg	Pro	Ala	Val	Leu	Leu	Cys	Leu	Ala	Cys	Asn	Glu	Ala	Gly	Arg	
1				5					10					15		
Thr	Val	Ser	Val	Thr	Val	Ser	Asn	Ala	Thr	Ser	Leu	Glu	Arg	Ser	Gly	
			20					25					30			
Glu	Met	Val	Glu	Val	Ser	Met	Gly	Glu	Val	Ser	Ser	Lys	Leu	His	Leu	
		35					40					45				
Pro	Asp	Thr	Ala	Gln	Ile	Val	Val	Val	Asp	Ala	Glu	Gly	Gln	Gln	Val	
	50					55					60					
Pro	Tyr	Gln	Ile	Thr	Ser	Asp	Glu	Lys	Val	Ile	Phe	Pro	Val	Thr	Val	
65					70					75					80	
Gln	Ala	Asn	Gly	Ser	Ala	Val	Tyr	Thr	Ile	Lys	Ala	Gly	Ile	Pro	Gln	
				85					90					95		
Glu	Cys	Pro	Val	Lys	Ala	Cys	Gly	Arg	Tyr	Tyr	Pro	Glu	Arg	Val	Asp	
			100					105					110			
Asp	Val	Ala	Trp	Glu	Asn	Asp	Leu	Thr	Ala	Phe	Arg	Ala	Tyr	Gly	Pro	
		115					120					125				
Ala	Leu	Gln	Glu	Thr	Gly	Glu	Arg	Ala	Phe	Gly	Tyr	Asp	Ile	Trp	Thr	
	130					135					140					
Lys	Tyr	Asn	Thr	Thr	Glu	Pro	Val	Val	Glu	Ala	Arg	Tyr	Glu	Gly	Glu	
145					150					155					160	
Leu	Asn	Ser	Asp	Met	Lys	Ala	Lys	Ile	Ala	Glu	Leu	Gly	Lys	Thr	Asp	
				165					170					175		
Pro	Lys	Ala	Ala	Gln	Glu	Leu	Tyr	Arg	Ser	Val	Ser	Tyr	His	Val	Asp	
		180						185					190			
His	Gly	Asn	Gly	Leu	Asp	Cys	Tyr	Lys	Val	Gly	Pro	Thr	Leu	Gly	Gly	
	195						200					205				
Gly	Thr	Thr	Ala	Leu	Met	Ala	Gly	Asp	Thr	Ile	Ile	Tyr	Pro	Tyr	Cys	
	210					215					220					
Tyr	Ala	Thr	Gln	Glu	Ile	Leu	Asp	Asn	Gly	Pro	Leu	Arg	Phe	Thr	Val	
225					230					235					240	
Lys	Leu	Val	Tyr	Asn	Pro	Leu	Val	Val	Lys	Gly	Asp	Ser	Thr	Ile	Ile	
				245					250					255		
Glu	Thr	Arg	Ile	Ile	Thr	Leu	Asp	Ala	Gly	Ser	Tyr	Cys	Asn	Lys	Thr	
			260					265					270			
Val	Val	Ser	Tyr	Thr	Asn	Leu	Lys	Glu	Thr	Met	Pro	Leu	Ala	Val	Gly	
		275					280					285				
Ile	Val	Leu	His	Glu	Pro	Asp	Gly	Ala	Ile	Val	Ala	Asp	Ala	Ala	Asn	
	290					295					300					
Gly	Tyr	Met	Thr	Tyr	Val	Asp	Pro	Thr	Asp	Asn	Ala	Gly	Gly	Asp	Asn	
305					310					315					320	
Gly	Lys	Ile	Phe	Val	Gly	Ala	Ala	Phe	Pro	Thr	Leu	Val	Lys	Glu	Ala	
				325					330		</					

Ala Asp Gly His Val Leu Ala Ile Ser Glu Tyr Glu Pro Gly Ala Asp  
           355                          360          365  
 Phe Thr Tyr Tyr Trp Gly Ala Ala Trp Ser Lys Ala Asp Ile Lys Asp  
       370                          375          380  
 Ser Ala Ala Trp Asn Ala Tyr Met Ala Asp Phe Ala Gln Lys Val Arg  
 385                          390          395          400  
 Asn Pro Leu Thr Val Thr Val Lys  
                           405

<210> 7745  
 <211> 253  
 <212> PRT  
 <213> B.fragilis

<400> 7745  
 Glu Ile Met Tyr Lys Val Ile Ile Ile Asp Asp Glu Lys Ala Ala Ile  
 1                          5          10          15  
 Glu Thr Leu Arg Arg Asp Leu Glu Val Gln Ala Asp Leu Glu Ile Lys  
           20                          25          30  
 Gly Thr Ala Gly Asn Gly Ala Lys Gly Lys Lys Leu Ile Met Asp Ile  
       35                          40          45  
 His Pro Asp Leu Leu Phe Leu Asp Ile Glu Leu Pro Asp Ile Gln Gly  
       50                          55          60  
 Ile Arg Leu Leu Ser Glu Ile Arg Glu Gln Val Leu Trp Asp Met Lys  
 65                          70          75          80  
 Val Val Phe Tyr Thr Ala Tyr Asp Lys Tyr Leu Leu Gln Ala Leu Arg  
                           85          90          95  
 Glu Ser Ala Phe Asp Tyr Leu Leu Lys Pro Tyr Asp Ile Glu Glu Leu  
           100                          105          110  
 Asn Leu Ile Ile Glu Arg Tyr Arg Lys Thr Met Ala Ser Ala Arg Pro  
       115                          120          125  
 Leu Pro Ser Phe Ala Ser Ala Val Gly Thr Leu Met Pro Gly Arg Asp  
       130                          135          140  
 Leu Phe Met Ile Ser Thr Val Thr Gly Phe Arg Phe Leu Arg Leu Glu  
 145                          150          155          160  
 Glu Ile Gly Tyr Phe Glu Tyr Leu Lys Asp Lys Arg Leu Trp Gln Val  
           165                          170          175  
 Glu Leu Phe Asn Gln Thr Lys Leu Cys Leu Lys Lys Asn Thr Thr Ala  
           180                          185          190  
 Gly Asp Ile Ile Gly Tyr Ser Asp Val Phe Val Gln Ile Ser Gln Ser  
       195                          200          205  
 Ala Ile Ile Asn Ile Asn Tyr Leu Ala Met Ile Lys Ser Lys Gln Cys  
       210                          215          220  
 Leu Leu Tyr Pro Pro Phe Ser Asp Lys Glu Asp Leu Ile Ile Ser Arg  
 225                          230          235          240  
 Gly Phe Leu Lys Glu Leu Gln Glu Arg Phe Cys Ile Ile  
                           245          250

<210> 7746  
 <211> 245  
 <212> PRT  
 <213> B.fragilis

<400> 7746  
 Glu His Pro Tyr Lys Pro His Phe Thr Phe Cys Ser Ser Arg Pro Ala  
 1                          5          10          15  
 Pro Gly Met His Leu Leu Tyr Ala Gly Asp Val Ala Ala Val Thr Phe  
           20                          25          30  
 Leu Ile Ser Leu Tyr Phe Leu Phe Lys Ser Tyr Gln Gln Pro Arg Pro

35	40	45
Ala Gly Tyr Leu Phe His Ser	Phe Ala Leu Leu Ser	Ala Gly Ser Val
50	55	60
Ala Phe Pro Gln Leu Thr Tyr	Phe Ile Pro Ile Trp	Leu Met Gly Ala
65	70	75
Ser Gly Phe Gln Ser Leu Thr	Phe Arg Ser Phe Cys	Gly Ala Ile Ile
85	90	95
Gly Trp Ser Ile Pro Tyr Trp	Phe Leu Leu Gly His	Ala Phe Phe His
100	105	110
Asn Glu Ile Glu Leu Phe Tyr	Gln Pro Phe Ile His	Leu Ala Asp Phe
115	120	125
Arg Asp Ile Asp Phe Gly Arg	Asp Phe Gln Leu Trp	Glu Val Val Thr
130	135	140
Leu Gly Tyr Leu Phe Ile Leu	Tyr Ile Val Ser Ser	Ile His Cys Ile
145	150	155
Val Ala Gly Tyr Glu Asp Lys	Ile Arg Thr Arg Ala	Tyr Leu His Phe
165	170	175
Leu Ile Phe Leu Asn Phe Cys	Ile Phe Leu Phe Ile	Val Leu Gln Pro
180	185	190
Ala Leu Ser Met Asn Leu Leu	Ser Leu Leu Leu Ile	Gly Ile Ser Ile
195	200	205
Leu Val Gly His Leu Phe Val	Leu Thr Asn Ser Lys	Ser Ser Asn Leu
210	215	220
Phe Phe Ile Gly Ser Met Ile	Thr Leu Ile Ala Leu	Phe Cys Phe Asn
225	230	235
Ile Trp Thr Leu Leu		
245		

&lt;210&gt; 7747

&lt;211&gt; 1119

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7747

Met Lys Gln Tyr Lys Thr Val	Asn Asn Leu Val Gly Trp	Ile Thr Phe
1	5	10
Leu Ile Ala Ala Thr Val Tyr	Cys Met Thr Ile Glu Pro	Thr Ala Ser
20	25	30
Phe Trp Asp Cys Pro Glu Phe	Ile Thr Thr Ala Tyr Lys	Leu Glu Val
35	40	45
Gly His Pro Pro Gly Ala Pro	Phe Phe Met Leu Thr Ala	Asn Leu Phe
50	55	60
Thr Gln Phe Val Ser Asp Pro	Ala Leu Val Ala Lys Met	Val Asn Tyr
65	70	75
Met Ser Ala Leu Met Ser Gly	Ala Cys Ile Leu Phe Leu	Phe Trp Ser
85	90	95
Ile Thr His Leu Val Arg Lys	Leu Val Ile Thr Asp Glu	Thr Asn Ile
100	105	110
Thr Arg Gly Gln Leu Ile Thr	Val Met Gly Ser Gly Leu	Val Gly Ala
115	120	125
Leu Ala Tyr Thr Phe Ser Asp	Thr Phe Trp Phe Ser Ala	Val Glu Gly
130	135	140
Glu Val Tyr Ala Tyr Ser Met	Phe Thr Ala Ile Val Phe	Trp Leu
145	150	155
Ile Leu Lys Trp Glu Asp Val	Ala Asp Gln Pro His Ser	Asp Arg Trp
165	170	175
Ile Ile Leu Ile Ala Tyr Leu	Thr Gly Leu Ser Ile Gly	Val His Leu
180	185	190
Leu Asn Leu Leu Cys Leu Pro	Ala Ile Val Leu Val Tyr	Tyr Tyr Lys

[illegible]

Ile Gln Met Ala Ser Gln Thr Trp Asp Asp His Asp Arg Ser Gly Arg  
 675 680 685  
 Tyr Val Ala Arg Asp Phe Gly Gln Asn Tyr Leu Met Ser Leu Gln Glu  
 690 695 700  
 Ser Gly Asn Pro Ile Ile Tyr Thr Asn Gly Asp Asn Asp Thr Phe Pro  
 705 710 715 720  
 Leu Trp Tyr Asn Gln Glu Thr Glu Ser Phe Arg Thr Asp Ala Arg Thr  
 725 730 735  
 Cys Asn Leu Ser Tyr Leu Gln Thr Asp Trp Tyr Ile Asp Gln Met Lys  
 740 745 750  
 Arg Pro Ala Tyr Asp Ser Pro Ala Leu Pro Ile Thr Trp Asp Arg Thr  
 755 760 765  
 Glu Tyr Met Glu Gly Gln Asn Glu Tyr Val Pro Ile Arg Pro Asp Phe  
 770 775 780  
 Lys Lys Gln Ile Asp Lys Ala Tyr Lys Ala Ala Glu Glu Glu Val Leu  
 785 790 795 800  
 Asn Gly Lys Asn Pro Glu Ala Leu Asn Asn Ile Arg Ala Gln Phe Gly  
 805 810 815  
 Asp Asn Pro Tyr Glu Leu Lys Asn Ile Leu Lys Tyr Trp Val Arg Thr  
 820 825 830  
 Lys Asp Gly Gln Ala Val Ile Pro Thr Asp Ser Ile Val Val Lys Ile  
 835 840 845  
 Asp Lys Glu Ala Val Arg Arg Ser Gly Met Met Ile Pro Glu Ala Leu  
 850 855 860  
 Gly Asp Ser Ile Pro Asp Tyr Met His Ile Ser Leu Lys Asp Glu Lys  
 865 870 875 880  
 Gly Asn Pro Lys Arg Ala Leu Tyr Lys Ser Glu Leu Met Met Leu Glu  
 885 890 895  
 Met Leu Ala Asn Ala Asn Trp Glu Arg Pro Ile Tyr Met Ala Ile Thr  
 900 905 910  
 Val Gly Thr Asp Asn Gln Leu Asn Met Arg Glu His Phe Ile Gln Glu  
 915 920 925  
 Gly Leu Thr Tyr Arg Phe Thr Pro Phe Asp Thr Glu Ala Leu Gly Ala  
 930 935 940  
 Thr Ile Asp Ser Glu Lys Met Tyr Asp Asn Leu Met Asn Lys Phe Lys  
 945 950 955 960  
 Phe Gly Gly Ile Asp Lys Pro Gly Ile Tyr Ile Asp Glu Asn Thr Met  
 965 970 975  
 Arg Met Cys Tyr Thr His Arg Arg Ile Phe Ala Gln Leu Ile Thr Gln  
 980 985 990  
 Leu Met Lys Glu Gly Lys Lys Asp Lys Ala Leu Ala Ala Leu Glu Tyr  
 995 1000 1005  
 Ala Glu Lys Met Ile Pro Ala Phe Asn Val Pro Tyr Asp Val Gln Asn  
 1010 1015 1020  
 Gly Ala Leu Glu Met Ala Glu Ala Tyr Tyr Gln Leu Gly Asn Asn Thr  
 1025 1030 1035 1040  
 Lys Ala Asp Gln Ile Ile Asp Glu Leu Ala Asn Lys Ser Val Glu Tyr  
 1045 1050 1055  
 Leu Thr Trp Tyr Leu Ser Leu Asp Asp Asn His Leu Leu Met Ser Gln  
 1060 1065 1070  
 Arg Glu Phe Ile Met His Leu Ser Ala Leu Asp Met Glu Val Lys Met  
 1075 1080 1085  
 Met Glu Lys Tyr Lys Ser Lys Leu Ala Gly Asn Tyr Thr Pro Lys Val  
 1090 1095 1100  
 Asn Glu Leu Tyr Asn Ile Tyr Val Gly Arg Met Lys Ala His Gln  
 1105 1110 1115

&lt;210&gt; 7748

&lt;211&gt; 305



&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7748

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Ser Asp Ile His Ser Pro Arg Ile Tyr Glu Glu Gln Cys Met Ala Asp
1      5      10      15
His Gly Phe Asn Val Arg Arg Lys Thr Asp Thr Leu His His Pro Ala
20      25      30
Glu Ser His Ala Gly Ser Pro Glu Pro Gly Tyr Val Lys Lys Asn Met
35      40      45
Glu Arg Ile Ile Glu Tyr Thr Ala Asp Gly Ser Ala Thr Leu Phe Val
50      55      60
Pro Glu Leu Asn Glu His Tyr His Ser Val Lys Gly Ala Leu Thr Glu
65      70      75      80
Ser Ser His Ile Phe Ile Asp Met Gly Leu Lys Ala Ser Ala Ser Pro
85      90      95
Ala Pro His Ile Leu Glu Ile Gly Phe Gly Thr Gly Leu Asn Ala Leu
100     105     110
Leu Thr Leu Ile Glu Ala Glu Arg Ser Gly Arg Gln Ile His Tyr Thr
115     120     125
Gly Ile Glu Leu Tyr Pro Leu Pro Trp Glu Thr Val Glu Lys Leu Arg
130     135     140
Tyr Asn Asp Arg Pro Gly Gly Asp Gly Glu Gln Arg Leu Thr Thr Gly
145     150     155     160
Asp Glu Gln Ala Ala Gln Trp Met Lys Ala Leu His Thr Ser Pro Trp
165     170     175
Gly Glu Asp Val Arg Ile Thr Pro His Phe Thr Leu Arg Lys Ile Gln
180     185     190
Gly Asp Phe Thr Ile Met Asp Arg Ser Ser Leu Ile Thr Asp Arg Thr
195     200     205
Ser Leu Phe Ser Leu Leu Tyr Phe Asp Ala Phe Ala Pro Glu Lys Gln
210     215     220
Pro Glu Met Trp Thr Gln Glu Leu Phe Asp Glu Leu Tyr Val Met Met
225     230     235     240
Glu Glu Glu Gly Ile Leu Thr Thr Tyr Cys Ala Lys Gly Val Val Arg
245     250     255
Arg Met Leu Gln Ala Ala Gly Phe Ile Val Glu Arg Leu Pro Gly Pro
260     265     270
Pro Gly Gly Lys Arg Glu Ile Leu Arg Ala Lys Lys Arg Ser Gln Asp
275     280     285
Ser Pro Ala Val Thr Gln Cys Asn Ala Gln Pro Thr Leu Lys Gln Lys
290     295     300
Gly
305

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&lt;210&gt; 7749

&lt;211&gt; 323

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7749

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Arg Ala Thr His Ile Lys Thr Glu Arg Ile Asn Ile Met Arg Met Asn
1      5      10      15
Arg Ile His Gln Ser Ile Val Thr His Ile Pro Gly Arg Gly Met Arg
20      25      30
Gly Gln Thr Val Leu Phe Leu Phe Leu Leu Leu Ser Ala Cys Ser
35      40      45
Gly Arg Gly Lys Gly Asp Ala Gly Glu Arg Ile Ile Thr Val Thr Met
50      55      60

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Glu Pro Gln Arg Tyr Phe Thr Glu Ala Ile Ala Gly Asp Lys Phe Thr  
 65 70 75 80  
 Val Arg Ser Met Val Pro Lys Gly Ser Ser Pro Glu Thr Tyr Asp Pro  
 85 90 95  
 Thr Pro Gln Gln Leu Val Ser Leu Gly Glu Ser Glu Ala Tyr Leu Arg  
 100 105 110  
 Ile Gly Tyr Ile Gly Phe Glu Arg Ser Trp Met Asp Arg Leu Met Asn  
 115 120 125  
 Asn Thr Pro His Ile Gln Val Phe Asp Thr Ser Thr Gly Val Asp Leu  
 130 135 140  
 Ile Phe Glu Ser Ala Phe Asp His Gly Asp His Arg His Glu Gly Gly  
 145 150 155 160  
 Val Glu Pro His Ile Trp Asn Ser Thr Ala Asn Ala Leu Ile Ile Ala  
 165 170 175  
 Gly Asn Thr Phe Lys Ala Leu Thr Val Leu Asp Lys Gly Asn Glu Ala  
 180 185 190  
 Tyr Tyr Lys Ala Arg Tyr Asp Ser Leu Cys Gln Arg Ile Glu Gln Thr  
 195 200 205  
 Asp Ser Leu Ile Arg Gln Thr Leu Ser Val Pro Gly Ala Asp Arg Ala  
 210 215 220  
 Phe Ile Ile Tyr His Pro Ala Leu Ser Tyr Phe Ala Arg Asp Tyr Gly  
 225 230 235 240  
 Leu His Gln Ile Ser Ile Glu Glu Gly Gly Lys Glu Pro Ser Pro Ala  
 245 250 255  
 His Leu Lys Gly Leu Met Asp Leu Cys Lys Lys Glu Gly Val Arg Val  
 260 265 270  
 Ile Phe Val Gln Pro Glu Phe Asp Arg Arg Asn Ala Glu Ile Ile Ala  
 275 280 285  
 Lys Gln Thr Gly Thr Arg Val Ile Ser Ile Asn Pro Leu Ser Tyr Asp  
 290 295 300  
 Trp Glu Glu Glu Met Leu Asn Val Ala Arg Ser Leu Arg Gly Glu Pro  
 305 310 315 320  
 Gly Tyr Gln

<210> 7750

<211> 243

<212> PRT

<213> B.fragilis

<400> 7750

Gln Arg Ile Lys Ile Asn Lys Ser Met Ala Glu Gln Ala Leu Phe Gln  
 1 5 10 15  
 Pro Phe Asn Arg Asn Gln Gln Arg Glu Asn Leu Glu Asn Thr Lys Glu  
 20 25 30  
 Thr Gly Leu Leu Ile Ser Leu Ile Pro Ser Leu Gln Glu Asp Phe Tyr  
 35 40 45  
 Val Asp Ser Leu Thr Thr Gly Ala Ser Lys Glu Thr Leu Ser Lys Leu  
 50 55 60  
 Leu Leu Arg Asn Pro Gly Ile Lys Asn Glu Thr Ala Val Ile Glu Met  
 65 70 75 80  
 Ile His Phe Leu His Asp Glu Gly Asp Arg Ile Ser Phe Ser Ile Leu  
 85 90 95  
 Leu Pro Phe Leu Val Ala Glu Tyr Asp Pro Lys Glu Leu Glu Glu Lys  
 100 105 110  
 Ile Arg Glu Arg Phe Phe Gly Ile Glu Leu Phe Ile Arg Lys Cys Asn  
 115 120 125  
 Asn Leu His His Phe Ile Thr Cys Ile Lys Ala Asp Gln Thr Ile Lys  
 130 135 140

Ile Gly Glu Glu Glu Leu Lys Arg Gly Val Leu Ala Trp Asp Met Gly  
 145 150 155 160  
 Arg Met Val Cys Leu Thr Arg Ile Ala Tyr Asp Ala Gly Phe Ile Asp  
 165 170 175  
 Glu Ser Leu Ala Trp Asn Tyr Ile Cys Ser Ala Gly Gln Gln Cys Ile  
 180 185 190  
 Gln Ala Phe Asn Asp Trp Thr Glu Val Gly Lys Ser Phe Leu Leu Gly  
 195 200 205  
 Gln Ala Met Glu Ala Thr Glu Lys Arg Lys Gln Glu Leu Tyr Ile Arg  
 210 215 220  
 Leu Tyr Arg Gln Ala Thr Glu Asn Pro Asn Ser Pro Trp Lys Lys Arg  
 225 230 235 240  
 Thr Leu Lys

<210> 7751  
 <211> 293  
 <212> PRT  
 <213> B.fragilis

<400> 7751

Pro Asn Tyr Lys Glu Glu Ile Val Met Lys Ala Asp Asn Arg Asn Ile  
 1 5 10 15  
 Phe Ala Ile Lys Ala Phe Leu Arg Glu Tyr Leu Asp Leu Arg Lys Asp  
 20 25 30  
 Lys Asp Asn Glu Leu Ala Thr Val Asp Ser Ile Arg Lys Gly Val Glu  
 35 40 45  
 Phe Lys Gly Ala Asn Leu Trp Ile Leu Ile Phe Ala Ile Phe Met Ala  
 50 55 60  
 Ser Leu Gly Leu Asn Val Asn Ser Thr Ala Val Ile Ile Gly Ala Met  
 65 70 75 80  
 Leu Ile Ser Pro Leu Met Gly Pro Ile Met Gly Ala Gly Leu Ser Val  
 85 90 95  
 Gly Met Asn Asp Phe Glu Leu Met Lys Arg Ser Leu Lys Ser Phe Leu  
 100 105 110  
 Ile Thr Thr Ala Phe Ser Val Thr Thr Ala Thr Val Phe Phe Leu Phe  
 115 120 125  
 Thr Pro Ile Ala Glu Ala Gln Ser Glu Leu Leu Ala Arg Thr Ser Pro  
 130 135 140  
 Thr Ile Tyr Asp Val Phe Ile Ala Leu Phe Gly Gly Leu Ala Gly Val  
 145 150 155 160  
 Val Ala Leu Ser Thr Lys Glu Lys Gly Asn Val Ile Pro Gly Val Ala  
 165 170 175  
 Ile Ala Thr Ala Leu Met Pro Pro Leu Cys Thr Ala Gly Tyr Gly Leu  
 180 185 190  
 Ala Ser Gly Asn Leu Ile Tyr Phe Leu Gly Ala Phe Tyr Leu Tyr Phe  
 195 200 205  
 Ile Asn Ser Val Phe Ile Ser Leu Ala Thr Phe Ile Gly Val Arg Leu  
 210 215 220  
 Met His Phe Gln Arg Lys Glu Phe Val Asp Lys Asn Arg Glu Lys Lys  
 225 230 235 240  
 Val Arg Lys Tyr Ile Val Leu Ile Val Ile Leu Thr Met Cys Pro Ala  
 245 250 255  
 Ile Tyr Leu Thr Met Gly Ile Ile Arg Ser Thr Phe Phe Glu Ala Ala  
 260 265 270  
 Ala Asn Arg Phe Val Ser Glu Gln Leu Asn Phe Asp Asn Thr Gln Val  
 275 280 285  
 Leu Asn Lys Lys Ile  
 290

<210> 7752  
 <211> 143  
 <212> PRT  
 <213> B.fragilis

<400> 7752

Lys	Ser	Asn	Asn	Met	Ala	Ile	Thr	Tyr	Gln	Thr	Glu	Gly	Ile	Lys	Met
1				5					10					15	
Pro	Asp	Ile	Lys	Lys	Arg	Glu	Thr	Thr	Glu	Trp	Ile	Lys	Ala	Val	Ala
			20					25					30		
Ala	Thr	Tyr	Glu	Lys	Arg	Ile	Gly	Glu	Ile	Ala	Tyr	Ile	Phe	Cys	Ser
		35					40					45			
Asp	Glu	Lys	Ile	Leu	Glu	Val	Asn	Arg	Gln	Tyr	Leu	Gln	His	Asp	Tyr
	50				55						60				
Tyr	Thr	Asp	Ile	Ile	Thr	Phe	Asp	Tyr	Cys	Glu	Gly	Asn	Arg	Leu	Ser
65					70					75				80	
Gly	Asp	Leu	Phe	Ile	Ser	Leu	Glu	Thr	Val	Lys	Thr	Asn	Ser	Glu	Gln
			85						90					95	
Phe	Asn	Thr	Pro	Tyr	Glu	Glu	Glu	Leu	His	Arg	Thr	Ile	Ile	His	Gly
			100					105						110	
Ile	Leu	His	Leu	Cys	Gly	Ile	Asn	Asp	Lys	Gly	Pro	Gly	Glu	Arg	Glu
		115					120					125			
Ile	Met	Glu	Ala	Ala	Glu	Asn	Lys	Ala	Leu	Ala	Met	Arg	Lys	Gln	
	130					135					140				

<210> 7753  
 <211> 120  
 <212> PRT  
 <213> B.fragilis

<400> 7753

Ile	Met	Ile	Lys	Gln	Ile	Met	Lys	Thr	Asn	Ser	Lys	Gln	Lys	Ser	Ala
1				5					10					15	
Leu	Leu	Val	Met	Leu	Leu	Ser	Leu	Leu	Ile	Pro	Asn	Ile	Met	Ala	Gln
			20					25					30		
Glu	Pro	Lys	Ile	Pro	Thr	Leu	Glu	Asp	Leu	Ile	Pro	Gly	Gly	Ala	Thr
		35				40						45			
Tyr	Arg	Ser	Ala	Glu	Asn	Ile	Ser	Gly	Leu	Gln	Trp	Trp	Gly	Asp	Gln
	50				55						60				
Cys	Ile	Lys	Pro	Gly	Ile	Glu	Ala	Val	Phe	Met	Ile	Asn	Pro	Lys	Asn
65					70				75					80	
Gly	Lys	Glu	Thr	Pro	Leu	Thr	Thr	Arg	Asn	Ile	Val	Asn	Lys	Ala	Leu
			85						90					95	
Glu	Ala	Gly	Asn	His	Gly	Lys	Leu	Gln	His	Phe	Tyr	Asn	Ala	Ser	Phe
			100					105						110	
Pro	Trp	Pro	Lys	Lys	Thr	Leu	Cys								
		115					120								

<210> 7754  
 <211> 409  
 <212> PRT  
 <213> B.fragilis

<400> 7754

Tyr	Glu	Met	Lys	Glu	Ile	Phe	Lys	Leu	Ile	Leu	Leu	Leu	Val	Ile	Leu
1				5					10					15	
Ser	Gly	Cys	Ile	Glu	Asn	Asp	Glu	Glu	Ile	Ile	Leu	Asn	Asn	Ser	Asp
			20					25					30		

Leu Glu Asp Val Ser Glu Tyr Lys Arg Ala Glu Asp Leu Ile Cys Gln  
 35 40 45  
 Phe Ser Glu Arg Ile Asp Lys Glu Lys Gly Gly Thr Arg Ser Ser Thr  
 50 55 60  
 Ser Gln Ile Ile Leu Ser Leu Ala Gly Lys Lys Ser Val Val Ile Pro  
 65 70 75 80  
 Lys Ile Ala Thr Arg Thr Gly Glu Ile Ser Thr Asp Ser Val Asn Met  
 85 90 95  
 Phe Ile Phe Asp Thr Glu Lys Asp Gly Arg Phe Gly Phe Ala Ile Ala  
 100 105 110  
 Thr Gly Lys Ala Glu Val Gly Arg Val Tyr Ala Tyr Val Glu Asn Gly  
 115 120 125  
 Ile Leu Ser Asp Thr Ile Glu Asn Glu Gly Met Ala Tyr Leu Val Ser  
 130 135 140  
 Gln Ile Pro Asp Ile Ile Lys Gln Asp Gln Leu Asn Pro Asn Leu Thr  
 145 150 155 160  
 Arg Ser Gly Glu Gln Arg Thr Thr His Val Ser Ile Pro Leu Val Lys  
 165 170 175  
 Thr Glu Trp Asn Gln His Tyr Pro Tyr Asn Ala Gln Met Pro Thr Asn  
 180 185 190  
 Gly Lys Cys Ser Ile Ser Tyr Tyr Tyr Ala Gly Cys Ile Pro Ile Ala  
 195 200 205  
 Val Ala Gln Ala Ile Thr Tyr Tyr Arg Lys Cys Pro Val Ala Tyr Asp  
 210 215 220  
 Trp Asp Ala Phe Thr Val Asn Thr Gly Ile Tyr Asp Thr Asn Leu Ile  
 225 230 235 240  
 Ala Pro Val Ser Gln Phe Val Lys Lys Val Ala Asp Gly Ile Lys Val  
 245 250 255  
 Gly Tyr Lys Cys Asp Gly Thr Gly Ala Lys Asn Leu Gly Ser Thr Asn  
 260 265 270  
 Asp Phe Leu Lys Gly Trp Gly Tyr Asn Val Glu Arg His Lys Thr Asn  
 275 280 285  
 Asp Val Asp Lys Asn Leu Leu Tyr Lys Cys Leu Ile Thr Lys Asn Val  
 290 295 300  
 Val Ile Phe Gly Gly Lys Lys Lys Ser Thr Gly His Val Trp Leu  
 305 310 315 320  
 Val Asp Gly Gly Val Phe Glu Tyr Ser Gly Asn Met Met Ile Gly Cys  
 325 330 335  
 Thr Asn Ile Gln Val Lys Ala Ile His Cys Asn Phe Gly Trp Asn Arg  
 340 345 350  
 Ala Asn Asn Gly Trp Tyr Ala Ile Lys Asp Gly Ala Tyr Asn Arg Pro  
 355 360 365  
 Ala Asn Ser Ala Ser Gln Asp Gly Asn Asn Pro Thr Asn Asp Lys Asn  
 370 375 380  
 Ser Pro Asn Gly Asn Phe Tyr Thr Glu Asn Asp Tyr Ile Tyr Phe His  
 385 390 395 400  
 Glu Ala Met Gly Thr Glu Ile Leu Trp  
 405

&lt;210&gt; 7755

&lt;211&gt; 405

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7755

Phe Val His Leu Arg Gly Ile Val Thr Gly Glu Phe Arg Leu Ile Phe  
 1 5 10 15  
 Leu His His Phe Asp Phe His Ile Gln Cys Ala Glu Val His Asp Lys  
 20 25 30

Phe Thr Leu Arg His Glu Gln Met Ile Val Val Gln Ala Glu Val Pro  
 35 40 45  
 Gly Glu Val Phe Tyr Arg Leu Val Cys Gln Phe Ile Asp Asn Leu Val  
 50 55 60  
 Gly Phe Arg Ile Val Ser Gln Leu Val Val Ser Phe Cys His Phe Glu  
 65 70 75 80  
 Cys Ser Val Leu Tyr Ile Val Gly His Val Glu Ser Arg Asn His Leu  
 85 90 95  
 Phe Gly Val Phe Gln Cys Cys Gln Arg Phe Val Leu Phe Ala Phe Phe  
 100 105 110  
 His Gln Leu Gly Asp Gln Leu Gly Lys Asp Ala Ala Met Gly Val Ala  
 115 120 125  
 His Ala His Arg Ile Leu Val Asp Val Asp Ala Gly Phe Val Asp Ala  
 130 135 140  
 Ser Glu Leu Glu Leu Val His Gln Val Val Ile His Leu Phe Thr Val  
 145 150 155 160  
 Asp Gly Gly Ser Glu Ser Phe Arg Ile Glu Arg Cys Glu Ala Val Cys  
 165 170 175  
 Gln Thr Leu Leu Asn Glu Met Leu Ala His Val Gln Leu Ile Val Arg  
 180 185 190  
 Thr Asp Gly Asp Gly His Val Asn Gly Ala Phe Pro Val Gly Ile Gly  
 195 200 205  
 Gln His Phe Glu His His Gln Leu Ala Leu Val Glu Ser Pro Phe Arg  
 210 215 220  
 Val Thr Leu Phe Val Phe Glu Arg Tyr Val His Val Val Gly Asp Gly  
 225 230 235 240  
 Val Thr Gln Cys Leu Arg Asn His His Thr Arg Thr Ala Asn Gly Phe  
 245 250 255  
 Phe Val Asp Phe Asp Asn Asp Ala Val Gly Arg Tyr His Cys Leu Ser  
 260 265 270  
 Val Phe Gly Ala Tyr Pro Ile Phe Gln Asp Val Leu Gln Leu Val Arg  
 275 280 285  
 Ile Ile Ala Glu Leu Gly Thr Asp Val Val Gln Cys Phe Arg Ile Leu  
 290 295 300  
 Ala Val Gln His Leu Phe Phe Gly Gly Phe Val Gly Phe Val Asp Leu  
 305 310 315 320  
 Leu Leu Glu Val Arg Thr Asp Gly Asp Val Phe Val Leu Thr Phe His  
 325 330 335  
 Val Phe Arg Ser Val Pro Ser Asp Gly Gln Cys Arg Arg Val Val Gly  
 340 345 350  
 Arg Thr Phe His Leu Val Asp Val Pro Val Gly Leu Glu Val Ala Gln  
 355 360 365  
 Val Thr Gly Thr Cys Val Gly Ala Glu Ala Phe Gly Phe Leu Val Val  
 370 375 380  
 Pro Gln Arg Glu Gly Ile Val Ile Thr Val Gly Ile Asp Asp Arg Val  
 385 390 395 400  
 Ala Ala Phe Leu Lys  
 405

&lt;210&gt; 7756

&lt;211&gt; 140

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7756

Gln Phe Lys Asp Leu Lys Thr Asp Ile Met Lys Thr Thr Gly Phe Leu  
 1 5 10 15  
 Lys Thr Val Ala Leu Ser Ala Val Leu Leu Val Ser Ser Val Ala Val  
 20 25 30

Ser Ala Arg Asn Tyr Asp Asn Asn Leu Ile Tyr Asn Ser Glu Glu Glu  
 35 40 45  
 Asn Gly Met Leu Ile Gly Gln Thr Val Tyr Lys Lys Glu Gly Ser Ser  
 50 55 60  
 Leu Ala Asn Tyr Met Lys Tyr Asn Tyr Lys Tyr Asp Asp Asn Lys Arg  
 65 70 75 80  
 Met Ile Glu Ser Gln Thr Met Lys Trp Asn Ser Tyr Lys Asn Asn Trp  
 85 90 95  
 Glu Asn Asp Leu Leu Val Arg Tyr Thr Tyr Glu Gly Lys Thr Ile Thr  
 100 105 110  
 Thr Asn Tyr Tyr Lys Trp Asn Asn Arg Lys Ser Glu Phe Ile Leu Ala  
 115 120 125  
 Pro Glu Met Thr Val Thr Met Asp Asn Pro Asn Leu  
 130 135 140

<210> 7757

<211> 302

<212> PRT

<213> B.fragilis

<400> 7757

Val Asn Met Glu Met Asn Asp Thr Pro Gln Asp Lys Tyr Leu Thr Ala  
 1 5 10 15  
 Leu Ala Lys Tyr Asp Thr Gln Leu Asn Asp Ala Asp Val Gln Val Gln  
 20 25 30  
 Val Ala Ala Leu Ile Glu Lys Lys Val Pro Glu Asn Asn Thr Glu Glu  
 35 40 45  
 Val Lys Lys Phe Leu Phe Asn Cys Ile Asp Leu Thr Thr Leu Asn Thr  
 50 55 60  
 Thr Asp Ser Asp Glu Ser Val Met Arg Phe Thr Glu Lys Val Asn Arg  
 65 70 75 80  
 Phe Asp Asp Glu Phe Pro Asp Leu Lys Asn Val Ala Ala Ile Cys Val  
 85 90 95  
 Tyr Pro Asn Phe Ala Gln Val Val Lys Asp Thr Leu Glu Val Glu Gly  
 100 105 110  
 Ile Asn Ile Ala Cys Val Ser Gly Gly Phe Pro Ser Ser Gln Thr Phe  
 115 120 125  
 Thr Glu Val Lys Ile Ala Glu Thr Ala Met Ala Leu Ala Asp Gly Ala  
 130 135 140  
 Asp Glu Ile Asp Ile Val Ile Pro Val Gly Ala Phe Leu Ser Gly Asp  
 145 150 155 160  
 Tyr Glu Thr Met Cys Glu Glu Ile Met Glu Leu Lys Glu Thr Cys Lys  
 165 170 175  
 Glu His His Leu Lys Val Ile Leu Glu Thr Gly Ala Leu Lys Thr Ala  
 180 185 190  
 Ser Asn Ile Lys Lys Ala Ser Ile Leu Ser Met Tyr Ser Gly Ala Asp  
 195 200 205  
 Phe Ile Lys Thr Ser Thr Gly Lys Gln Gln Pro Ala Ala Thr Pro Glu  
 210 215 220  
 Ala Ala Tyr Val Met Cys Gln Ala Ile Lys Glu Tyr Tyr Glu Gln Thr  
 225 230 235 240  
 Gly Asn Lys Val Gly Phe Lys Pro Ala Gly Gly Ile Asn Thr Val Asn  
 245 250 255  
 Asp Ala Leu Ile Tyr Tyr Thr Ile Val Lys Glu Val Leu Gly Lys Glu  
 260 265 270  
 Trp Leu Ser Asn Glu Leu Phe Arg Leu Gly Thr Ser Arg Leu Ala Asn  
 275 280 285  
 Leu Leu Leu Ser Glu Ile Lys Gly Glu Glu Leu Lys Phe Phe  
 290 295 300

<210> 7758  
 <211> 627  
 <212> PRT  
 <213> B.fragilis

<400> 7758

Thr	Arg	Arg	Trp	Lys	Pro	Glu	Ile	Thr	Val	Ser	Cys	Asn	Thr	Ser	Thr
1				5					10					15	
Met	Pro	Val	Ser	His	Gly	Gln	Arg	Lys	Pro	Tyr	Ala	Asp	Arg	Pro	Ala
			20					25					30		
Asp	Lys	Tyr	Ile	Val	Tyr	Asp	Phe	Asp	Tyr	Arg	Glu	Val	Ile	Ser	Thr
		35					40					45			
Arg	Pro	Leu	Pro	Lys	Glu	Gly	Ala	Asn	Arg	Asp	Tyr	His	Pro	Glu	Thr
	50					55					60				
Gly	His	Val	Ala	Tyr	Thr	Ile	Gly	Asn	Asn	Leu	Tyr	Val	Asp	Asp	Arg
65					70					75					80
Ala	Val	Thr	Asn	Glu	Pro	Glu	Gly	Ile	Val	Cys	Gly	Gln	Ser	Val	His
				85					90					95	
Arg	Asn	Glu	Phe	Gly	Ile	Lys	Lys	Gly	Thr	Phe	Trp	Ser	Pro	Ser	Gly
			100					105					110		
Asn	Leu	Leu	Ala	Phe	Tyr	Arg	Met	Asp	Gln	Ser	Met	Val	Ala	Gln	Tyr
		115					120					125			
Pro	Leu	Val	Asp	Val	Thr	Ala	Pro	Ile	Ala	Glu	Val	Asn	Asn	Ile	Arg
	130					135					140				
Tyr	Pro	Met	Ala	Gly	Met	Thr	Ser	His	Gln	Val	Lys	Val	Gly	Ile	Tyr
145					150					155					160
Asn	Pro	Ala	Thr	Gly	Lys	Ser	Ile	Tyr	Leu	Asn	Ala	Gly	Asp	Pro	Thr
				165					170					175	
Asp	Arg	Tyr	Phe	Thr	Asn	Ile	Ser	Trp	Ala	Pro	Asp	Glu	Lys	Ser	Leu
			180					185					190		
Tyr	Leu	Ile	Glu	Leu	Asn	Arg	Asp	Gln	Asn	His	Ala	Lys	Leu	Cys	Arg
		195					200				205				
Tyr	Asp	Val	Glu	Thr	Gly	Glu	Leu	Thr	Ala	Thr	Leu	Phe	Glu	Glu	Lys
	210					215					220				
Ser	Asp	Lys	Tyr	Val	Glu	Pro	Gln	Asp	Pro	Ile	Ile	Phe	Leu	Pro	Trp
225					230					235					240
Asp	Asn	Ser	Lys	Phe	Ile	Tyr	Gln	Ser	Gln	Lys	Asp	Gly	Phe	Ser	His
				245					250					255	
Leu	Tyr	Leu	Tyr	Asp	Thr	Asn	Gly	Arg	Gln	Ile	Arg	Gln	Leu	Thr	Glu
			260					265					270		
Gly	Asp	Trp	Leu	Val	Lys	Glu	Val	Leu	Gly	Phe	Asp	Thr	Lys	Lys	Lys
		275					280					285			
Glu	Ile	Ile	Ile	Ala	Ser	Thr	Glu	Phe	Ser	Pro	Leu	Gln	Asn	Asn	Leu
	290					295					300				
Phe	Arg	Leu	Asp	Thr	Lys	Thr	Gly	Thr	Arg	Thr	Pro	Leu	Gly	Ser	Ala
305					310					315					320
Glu	Gly	Val	His	Ser	Gly	Gln	Leu	Ser	Pro	Ser	Gly	Arg	Tyr	Leu	Ile
				325					330					335	
Asp	Gln	Tyr	Asn	Ser	Pro	Thr	Val	Pro	Arg	Ser	Ile	Asn	Ile	Ile	Asp
			340					345					350		
Val	Gln	Ser	Gly	Lys	Ser	Val	Asn	Leu	Leu	Thr	Ala	Ala	Asp	Pro	Phe
		355					360					365			
Thr	Gly	Tyr	Lys	Met	Pro	Gly	Ile	Glu	Thr	Gly	Thr	Ile	Lys	Ala	Ala
	370					375					380				
Asp	Gly	Lys	Thr	Asp	Leu	Tyr	Tyr	Arg	Leu	Ile	Lys	Pro	Ala	Asp	Phe
385					390					395					400
Asp	Pro	Asn	Lys	Lys	Tyr	Pro	Ala	Ile	Val	Tyr	Val	Tyr	Gly	Gly	Pro
				405					410					415	



His Ala Gln Leu Val Thr Asn Gly Trp Gln Asn Gly Ala Arg Gly Trp  
 420 425 430  
 Asp Ile Tyr Met Ala Asn Lys Gly Tyr Ile Met Phe Thr Val Asp Gly  
 435 440 445  
 Arg Gly Ser Ser Asn Arg Gly Leu Asp Phe Glu Asn Val Thr Phe Arg  
 450 455 460  
 Gln Leu Gly Ile Glu Glu Gly Arg Asp Gln Val Lys Gly Thr Glu Phe  
 465 470 475 480  
 Leu Lys Ser Leu Pro Tyr Val Asp Gly Asn Arg Ile Gly Val His Gly  
 485 490 495  
 Trp Ser Phe Gly Gly His Met Thr Thr Ala Leu Leu Leu Arg Tyr Pro  
 500 505 510  
 Glu Ile Phe Lys Val Gly Val Ala Gly Gly Pro Val Ile Asp Trp Gly  
 515 520 525  
 Tyr Tyr Glu Val Met Tyr Gly Glu Arg Tyr Met Asp Thr Pro Gln Ser  
 530 535 540  
 Asn Pro Lys Gly Tyr Lys Glu Cys Asn Leu Lys Asn Leu Ala Gly Asn  
 545 550 555 560  
 Leu Lys Gly His Leu Met Ile Ile His Asp Asp His Asp Asp Thr Cys  
 565 570 575  
 Val Pro Gln His Thr Leu Ser Phe Met Lys Ala Cys Ile Asp Ala Arg  
 580 585 590  
 Thr Tyr Pro Asp Leu Phe Ile Tyr Pro Cys His Lys His Asn Val Ser  
 595 600 605  
 Gly Arg Asp Arg Val His Leu His Glu Lys Ile Thr Arg Tyr Phe Glu  
 610 615 620  
 Asp Tyr Leu  
 625

&lt;210&gt; 7759

&lt;211&gt; 132

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7759

Lys Lys Lys Cys Gly Asn Phe Ala Phe Glu Ile Lys Lys His Ile Thr  
 1 5 10 15  
 Met Lys Thr Lys Met Ile Val Leu Val Gly Met Leu Phe Thr Gln Ile  
 20 25 30  
 Val Phe Thr Ser Asn Asn Val Tyr Gly Glu Asp Val Met Ala Ile Met  
 35 40 45  
 Lys Asp Arg His Lys Val His Leu Ile Thr His Lys Glu Ala Asn Leu  
 50 55 60  
 Gln Arg Ser Thr Leu Leu Val Ala Cys Gly Tyr Ile Glu Glu Ser Gln  
 65 70 75 80  
 Leu Phe Leu Asn Phe Asn Ser Ser Leu Glu Asn Arg Lys Ile Gln Val  
 85 90 95  
 Val Asp Ser Glu Thr Gly Gln Thr Val Phe Asp Asp Thr Ile Thr Gly  
 100 105 110  
 Thr Ser Phe Ser Ile Phe Leu Glu Arg Asp Ser Asp Ser Phe Asp Ile  
 115 120 125  
 Tyr Ile Gly Arg  
 130

&lt;210&gt; 7760

&lt;211&gt; 151

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7760

Phe Glu Leu Cys Ile Arg Glu Arg Ser Glu Asn Arg Arg Ile Arg Ser  
 1 5 10 15  
 Arg His Glu Ser Arg Val Ile Glu Arg Arg Thr Cys Asn Tyr Leu His  
 20 25 30  
 Arg Tyr Gln Lys Gln Gly Ile Met Thr Leu Glu Glu Ala Gln Lys Ala  
 35 40 45  
 Val Asp Glu Trp Ile His Lys Tyr Gly Val Arg Tyr Phe Ser Glu Leu  
 50 55 60  
 Thr Asn Met Ala Val Leu Thr Glu Glu Val Gly Glu Leu Ala Arg Ile  
 65 70 75 80  
 Met Ala Arg Lys Tyr Gly Asp Gln Ser Phe Lys Glu Gly Glu Lys Asp  
 85 90 95  
 Asp Ile Ser Asp Glu Ile Thr Asp Val Leu Trp Val Leu Leu Cys Ile  
 100 105 110  
 Ala Asn Gln Thr Gly Val Asn Leu Thr Glu Ala Phe Ala Arg Asn Leu  
 115 120 125  
 Glu Lys Lys Thr Gln Arg Asp Asn Lys Arg His Ile Asn Asn Pro Lys  
 130 135 140  
 Leu Ser Glu His Gly Asn Glu  
 145 150

&lt;210&gt; 7761

&lt;211&gt; 377

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7761

Val Arg Lys Cys Phe Ala Pro Ser Phe Leu Trp Phe Leu Phe Ile Gly  
 1 5 10 15  
 Leu Gly Met Gly Cys Val Gly Thr Leu Leu Val Ala Met Thr Met Leu  
 20 25 30  
 Ala Gln His Pro Val Arg Gln Cys Ala Val Ser Gln Gln Leu Asp Arg  
 35 40 45  
 Ala Val Glu Val Pro Phe Gln Pro Phe Gly Val Asp Ala Cys Gly Arg  
 50 55 60  
 Val Ile Val Gln Cys Phe Val His Ala Gly Asp Val Leu Tyr Leu Leu  
 65 70 75 80  
 Gln His Arg Pro Asp Val Met Ala Asp Glu Asp Asp Gly Ala Val Ala  
 85 90 95  
 Val Asp Leu Arg Gln Gln Leu Val Glu Ala Gly Phe Glu Ala Leu Val  
 100 105 110  
 Asp Val Gly Ala Arg Leu Val Glu Asn Lys Gln Leu Arg Val Ala Asp  
 115 120 125  
 Asp Gly Ser Ser Gln Gln Gly Ala Leu Gln Leu Ser Ala Ala Gln Leu  
 130 135 140  
 Ser Asp Gly Pro Val Phe Lys Ser Leu Glu Ser His Ala Val Asp His  
 145 150 155 160  
 Leu Ser Gly Phe Leu Ala Val Thr Val Ile Glu Thr Ala Gly Gln Arg  
 165 170 175  
 Leu Leu Gly Ala Glu Ser Arg Glu Asp Tyr Leu Glu Asn Arg Asp Gly  
 180 185 190  
 Glu Gly Ala Val Asp Arg Val Val Leu Arg Glu Ile Ala Arg Arg Glu  
 195 200 205  
 Trp Phe Val Ile Phe Asp Asp Phe Ser Ser Cys Gly Ala Lys Gln Ser  
 210 215 220  
 Gln Asn Ala Phe Asp Lys Ser Cys Leu Ala Ser Ala Val Gly Pro Asp  
 225 230 235 240  
 Asp Ala Glu Glu Ile Val Leu Val Asp Leu Gln Ile Asp Ile Val Glu

				245					250					255			
His	Arg	Ala	Ser	Val	Ile	Gly	Gly	Gly	Glu	Ser	Ser	Asp	Gly	Glu	Glu		
			260					265					270				
Gly	Gly	Gly	Ser	Arg	Cys	Phe	Arg	Met	Leu	Val	Gly	Phe	Ser	Phe	Phe		
		275					280					285					
Ile	His	Glu	Leu	Leu	Glu	Val	Gly	Tyr	Trp	Tyr	Pro	Gly	Ser	Pro	Arg		
	290				295						300						
Arg	Leu	Leu	Ala	Thr	Phe	Ser	Ile	Ser	Ser	Ser	Gln	Ser	Tyr	Glu	Arg		
305					310						315				320		
Gly	Leu	Met	Glu	Ile	Thr	Arg	Val	Pro	Val	Cys	Phe	Ala	Met	Ile	Ser		
				325					330					335			
Ala	Phe	Arg	Arg	Ser	Asn	Ser	Gly	Trp	Thr	Lys	Met	Thr	Arg	Thr	Pro		
			340					345					350				
Ser	Phe	Leu	Gln	Arg	Ser	Ile	Ser	Pro	Phe	Arg	Trp	Ala	Gly	Asp	Gly		
	355					360						365					
Ser	Leu	Pro	Pro	Ser	Ser	Ile	Leu	Ile									
	370					375											

&lt;210&gt; 7762

&lt;211&gt; 304

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7762

Asn	Ile	Asn	Arg	Leu	Lys	Arg	Ile	Thr	Glu	Ser	Met	Lys	Ile	Val	Ile		
1				5					10					15			
Lys	Glu	Lys	Val	Ile	Pro	Tyr	Ile	Leu	Ile	Ser	Leu	Phe	Ser	Phe	Ile		
			20					25					30				
Gly	Leu	Ser	Ala	Tyr	Gly	Tyr	Lys	Ala	Glu	Gly	Gln	Gly	Gly	Ser	Lys		
	35						40					45					
Ala	Val	Val	Trp	Ser	Ile	Ser	Lys	Ile	Asp	Thr	Met	Gln	Lys	Asn	Val		
	50					55				60							
Gln	Arg	Asn	Asp	Glu	Arg	Asn	Pro	Asn	Ile	Gln	Asn	Ile	Glu	Tyr	Leu		
65				70					75					80			
Lys	Lys	Met	Phe	Arg	Gln	Lys	Ala	Val	Asp	Glu	Ile	Ser	Glu	Asn	Ile		
			85						90					95			
Val	Tyr	Pro	Leu	Lys	Arg	Thr	Ser	Pro	Ile	Pro	Ser	Val	Glu	Asn	Ala		
		100						105					110				
Glu	Glu	Leu	Lys	Glu	Arg	Phe	Asp	Ser	Ile	Phe	Asp	Glu	Asp	Leu	Ile		
		115					120					125					
Arg	Ile	Ile	Thr	Ser	Ser	Asp	Ile	Asp	Gln	Trp	Ser	Glu	Met	Gly	Trp		
	130					135					140						
Arg	Gly	Ile	Met	Leu	Asp	Asp	Gly	Ile	Leu	Trp	Met	Asp	Tyr	Asp	Gly		
145				150						155				160			
Lys	Ile	Thr	Ala	Val	Asn	Tyr	Gln	Ser	Lys	Tyr	Glu	Lys	Lys	Leu	Ala		
			165						170					175			
Lys	Lys	Leu	Thr	Ser	Lys	Val	Lys	Gly	Asp	Leu	Ser	Ser	Asp	Leu	Arg		
		180						185					190				
His	Asn	Phe	Lys	Gly	Glu	Val	Tyr	Lys	Phe	Lys	Thr	Lys	Asn	Tyr	Phe		
	195						200					205					
Ile	Arg	Ile	Asp	Glu	Leu	Lys	Asn	Gly	Met	Tyr	Arg	Tyr	Ala	Cys	Trp		
	210					215					220						
Lys	Lys	Glu	Asn	Pro	Glu	Ser	Thr	Lys	Pro	Asp	Leu	Val	Leu	Glu	Asn		
225				230						235				240			
Gly	Lys	Ile	Glu	Phe	Ser	Gly	Ser	Gly	Gly	Asn	His	Val	Ile	Thr	Phe		
			245						250					255			
Lys	Asn	Asn	Ile	Tyr	Glu	Tyr	Lys	Val	Phe	His	Asn	Lys	Ile	Ala	Ala		
	260							265					270				
Ser	Gly	Ile	Ala	Asp	Ile	Thr	Leu	Val	Val	Glu	Lys	Asn	Gly	Lys	Glu		

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 Ile Leu Ser Glu Asp Gly Lys Leu Glu Asp Asp Ile Thr Gln Thr Asp  
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<210> 7763  
 <211> 544  
 <212> PRT  
 <213> B.fragilis

<400> 7763

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 Trp Leu Cys Phe Cys Leu Ser Ile Thr Gly Cys Ala Glu Asp Asp Arg  
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 Met Thr Pro Leu Ser Ala Asp Ser Gly Asp Thr Ala Asp Glu Leu Ile  
 35 40 45  
 Pro Ile His Ile Ser Leu Thr Gly Asp Asn Asp Tyr His Ser Ser Ser  
 50 55 60  
 Phe Asn Asp Ala Ser Thr Arg Ser His Ser Pro Leu Ile Ala Glu Trp  
 65 70 75 80  
 Val Gly Val Lys Ala Phe Ser Pro Thr Arg Thr Gly Glu Gln Pro Asp  
 85 90 95  
 Tyr Asp Gly Pro Arg Ile Ala Ser Met Glu Leu Thr Glu Asp Thr Leu  
 100 105 110  
 Pro Arg Val Ser Thr Arg Ala Thr Val Pro Ala Gly Val Tyr Phe Arg  
 115 120 125  
 Leu Ile Val Phe Arg Lys Ser Gly Ser Glu Tyr Val Phe Gln Ser Ala  
 130 135 140  
 Ala Asp Tyr Thr Ser Asn Gly Thr Gly Thr Pro Val Leu Lys Gln Gly  
 145 150 155 160  
 Arg Leu Leu Thr Arg Ser Gly Thr Ile Arg Val Val Gly Tyr Ser Phe  
 165 170 175  
 Asn Thr Thr Thr Ala Ala Asp Leu Gly Thr Met Pro Ser Thr Tyr Ala  
 180 185 190  
 Tyr Asn Ser Ser Thr Val Ser Ile Pro Asn Met Ser Lys Asp Phe Met  
 195 200 205  
 Thr Phe Asp Ser Gly Asp Ile Thr Asn Val Asn Ser Leu Ser His Asn  
 210 215 220  
 Leu Pro Val Ser Phe Asn Gln Lys Leu Cys Lys Leu Thr Ile Thr Ile  
 225 230 235 240  
 Ser Pro Thr Gly Phe Pro Ser Asn Thr Ile Thr Asn Cys Thr Gly Val  
 245 250 255  
 Tyr Val Lys Gln Gly Gly Asn Ser Thr Ser Trp Lys Ile Gly Pro Ser  
 260 265 270  
 Thr Asn Val Val Ala Ala Asn Thr Asn Asn Thr Ala Ala Phe Ser Pro  
 275 280 285  
 Lys Thr Thr Leu Ser Thr Thr Ile Arg Met Val Pro Phe Ala Gly Ala  
 290 295 300  
 Arg Thr Ile Thr Val His Phe Asn Thr Leu Thr Ile Ser Gly Arg Thr  
 305 310 315 320  
 Val Pro Asn Asn Thr Glu Ile Thr Ser Thr Gln Ser Val Gln Leu Lys  
 325 330 335  
 Glu Gly Lys Ser Tyr Thr Met Lys Ile Gln Phe Lys Lys Ala Ile Gly  
 340 345 350  
 Ile Asn Val Pro Ala Ser Asn Ile Asn Leu Thr Gln Asn Gly Cys Thr  
 355 360 365  
 Glu Asn Asp Lys Thr Ile Leu Ser Lys Leu Arg Trp Ala Glu Gly Asn  
 370 375 380  
 Leu Asn Ser Gln Ser Asn Tyr Asn Leu Thr Trp Ala Ser Ser Thr Thr

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385              390              395              400
Asp Tyr Gly Tyr Tyr Tyr Ile Trp Lys Asn Val Tyr Val Ser Ser Gly
              405              410              415
Tyr Thr Gly Tyr Gly Ala Val Asp Pro Cys Thr Arg Leu Asp Glu Ser
              420              425              430
Lys Tyr Gly Ser Gly Trp Arg Thr Pro Thr Arg Ser Glu Phe Ile Ser
              435              440              445
Leu Ser Arg Cys Ser Asn Lys Gln Leu Val Lys Tyr Asn Gly Ile Gln
              450              455              460
Gly Met Trp Phe Met Asn Ser Ser Thr Gly Leu Phe Leu Pro Ala Ala
465              470              475              480
Gly Trp Arg Asp Gly Asn Asn Gly Ser Gly Thr Thr Ala Thr Ala Tyr
              485              490              495
Thr Asp Gly Thr Gly Ser Tyr Tyr Trp Ser Ser Asp Leu Asn Gly Asn
              500              505              510
Ser Ala Tyr Gly Leu Tyr Ile Leu Lys Asn Asp Val Phe Val Asp Ala
              515              520              525
Asn Gly Asn Arg Lys Ser Gly Val Ser Val Arg Cys Val His Asn Leu
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<210> 7764
<211> 154
<212> PRT
<213> B.fragilis

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<400> 7764
Gln Leu Ser Arg Ser Asp Ile Thr Ile Thr Tyr Asn Thr Met Thr Glu
1              5              10              15
Phe Arg Tyr Ser Ile Cys Glu Pro Leu Asn Pro Lys Val Ile Glu Lys
              20              25              30
Gly Met Ile Ala Pro Asp Ser Val Ile Gly Leu Phe Asn Asp Phe Gln
              35              40              45
Trp Asp Tyr Tyr Leu Lys Gln Ile Glu Val Ala Glu Thr Arg Lys Met
              50              55              60
Asp Ile Tyr Phe Ser Pro Ser Leu Glu Val Glu Asn Lys Ala Asn Lys
65              70              75              80
Asn Gly Leu Thr Ile Ser Ala Val Gly Asp Pro Glu Asp Pro Glu Phe
              85              90              95
Tyr Ile Phe Tyr Lys Arg Pro Ile Ser Val Val Lys Lys Gln Phe Phe
              100              105              110
Arg Lys Pro Gln Thr Val Val Glu Asp Tyr Val Ser Glu Ile Thr Gly
              115              120              125
Gln Thr Lys Glu Asp Ile Ile Glu Cys Leu Asn Ala Leu Ile Lys Asn
              130              135              140
Asp Gln Glu Phe Leu Arg Arg Lys Ile Ala
145              150

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<210> 7765
<211> 158
<212> PRT
<213> B.fragilis

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<400> 7765
Gln Arg Leu Ser Asn Ile Ile Arg Met Arg Val Val Ile Gln Arg Val
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Ser His Ala Ser Val Thr Ile Asp Gly His Cys Lys Ser Ala Ile Gln
              20              25              30
Lys Gly Met Met Ile Leu Val Gly Ile Glu Glu Thr Asp Ser Arg Glu
              35              40              45

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Asp Ile Asp Trp Leu Cys Lys Lys Ile Val Asn Leu Arg Ile Phe Asp  
 50 55 60  
 Asp Glu Asn Gly Val Met Asn Lys Ser Ile Leu Glu Asp Glu Gly Asn  
 65 70 75 80  
 Ile Leu Val Leu Ser Gln Phe Thr Leu His Ala Ser Thr Lys Lys Gly  
 85 90 95  
 Asn Arg Pro Ser Tyr Ile Lys Ala Ala Lys Pro Glu Ile Ser Ile Pro  
 100 105 110  
 Leu Tyr Glu Gln Phe Cys Asn Asp Leu Ser Cys Ala Leu Gly Lys Glu  
 115 120 125  
 Val Lys Thr Gly Glu Phe Gly Ala Asp Met Lys Val Glu Leu Leu Asn  
 130 135 140  
 Asp Gly Pro Val Thr Ile Cys Ile Asp Thr Lys Asn Lys Glu  
 145 150 155

<210> 7766

<211> 191

<212> PRT

<213> B.fragilis

<400> 7766

Thr Arg Lys Arg Arg Ser His Ala Leu Pro Gln Thr Leu Pro Pro Leu  
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 Ser Ala Ser Pro Phe Pro Gln Asn Pro Thr Ile Met Ala Lys Tyr  
 20 25 30  
 Lys Leu Thr Leu Lys Lys Asn Pro Asn Lys Arg Asn Glu Pro Gly Lys  
 35 40 45  
 Trp Tyr Ala Ile Pro Thr Thr Val Asn Ser Leu Asp Thr Arg Ala Val  
 50 55 60  
 Thr Arg Ala Val Thr Arg Asn Thr Thr Val Ala Pro Thr Glu Leu Glu  
 65 70 75 80  
 Thr Ser Met Asn Leu Val Cys Asp Gly Ile Pro Ala Leu Leu Gln Gln  
 85 90 95  
 Gly Asn Ser Val Arg Ile Gly Ser Leu Gly Thr Leu Arg Leu Ser Phe  
 100 105 110  
 Gly Ser Thr Gly Thr Glu Asn Ile Asp Asp Phe Asn Ala Ala Thr Met  
 115 120 125  
 Ile Lys Asn Val Lys Ile Val Phe Thr Pro Ser Lys Glu Leu Lys Ala  
 130 135 140  
 Ala Val Gln Glu Gly Leu Ser Phe Glu Asn Ala Gly Val Ile Glu Thr  
 145 150 155 160  
 Gly Phe Thr Tyr Pro Ser Val Gln Asp Tyr Lys Lys Tyr Lys Val Ala  
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 Asp Arg Pro Ala Gly Gly Gly Asp Ile Val Asp Asp Pro Thr Ala  
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<210> 7767

<211> 303

<212> PRT

<213> B.fragilis

<400> 7767

Asn Ser Leu Ile Met Ser Pro Leu Asn Phe Thr His Ile Leu Thr Gln  
 1 5 10 15  
 Thr Val Asp Glu Leu Ser Glu Ser Glu Ser Tyr Lys Gly Leu Phe His  
 20 25 30  
 Gln His Lys Asp Gly Glu Pro Leu Pro Ser Pro Arg Val Leu Cys Asp  
 35 40 45  
 Val Ile Glu Leu Ala Arg Ser Ile Leu Phe Pro Gly Tyr Tyr Gly Asn

50		55		60
Ser Thr Val Asn Ser Arg Thr Ile Asn Tyr His Ile Gly Val Asn Val				
65		70		75
Glu Lys Leu Phe Asn Leu Leu Thr Glu Gln Ile Leu Ala Gly Leu Cys				80
	85		90	95
Phe Gly Asn Gly Asp Arg Cys Asp Glu Cys Thr Glu Ala Lys Arg Glu				
	100		105	110
Glu Ala Ala Arg Leu Ala Ala Lys Phe Ile Ser Lys Leu Pro His Leu				
	115		120	125
Arg Arg Val Leu Ala Thr Asp Val Glu Ala Ala Tyr Asn Gly Asp Pro				
	130		135	140
Ala Ala Gln Ser Phe Gly Glu Val Ile Phe Cys Tyr Pro Ala Ile Lys				
145		150		155
Ala Ile Ser Asn Tyr Arg Ile Ala His Glu Leu Leu Glu Leu Gly Val				
	165		170	175
Pro Leu Ile Pro Arg Ile Ile Thr Glu Met Ala His Ser Glu Thr Gly				
	180		185	190
Ile Asp Ile His Pro Gly Ala Arg Ile Gly Thr His Phe Thr Ile Asp				
	195		200	205
His Gly Thr Gly Val Val Ile Gly Ala Thr Ser Ile Ile Gly Asn Asn				
210		215		220
Val Lys Leu Tyr Gln Gly Val Thr Leu Gly Ala Arg Ser Phe Pro Leu				
225		230		235
Asp Ala Asp Gly Lys Pro Ile Lys Gly Ile Pro Arg His Pro Ile Leu				
	245		250	255
Glu Asp Asn Val Ile Val Tyr Ser Asn Ala Thr Ile Leu Gly Arg Ile				
	260		265	270
Thr Ile Gly Arg Asp Ala Thr Val Gly Gly Asn Ile Trp Val Thr Glu				
	275		280	285
Asn Ile Pro Ala Gly Ala Arg Ile Val Gln Thr Lys Ala Lys Lys				
290		295		300

&lt;210&gt; 7768

&lt;211&gt; 631

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7768

Glu Ile Asn Ile Asp Ser Met Asp Phe Lys Tyr Asp Val Ile Val Ile				
1	5		10	15
Gly Ala Gly His Ala Gly Cys Glu Ala Ala Ala Ala Ala Ala Asn Leu				
	20		25	30
Gly Ser Lys Thr Cys Leu Ile Thr Met Asp Met Asn Lys Val Ala Gln				
	35		40	45
Met Ser Cys Asn Pro Ala Val Gly Gly Ile Ala Lys Gly Gln Ile Val				
	50		55	60
Arg Glu Ile Asp Ala Leu Gly Gly Tyr Met Gly Leu Val Thr Asp Gln				
65		70		75
Thr Ala Ile Gln Phe Arg Ile Leu Asn Arg Ser Lys Gly Pro Ala Met				
	85		90	95
Trp Ser Pro Arg Ala Gln Cys Asp Arg Asn Lys Phe Ile Trp Ala Trp				
	100		105	110
Arg Glu Ile Leu Glu Asn Ile Pro Asn Leu His Ile Trp Gln Asp Thr				
	115		120	125
Val Lys Glu Ile Ile Val Glu Asn Gly Glu Val Val Gly Leu Lys Thr				
	130		135	140
Phe Trp Asp Val Thr Phe His Ala Arg Cys Ile Val Leu Thr Ala Gly				
145		150		155
Thr Phe Leu Asn Gly Leu Met His Val Gly Lys Thr Gln Leu Pro Gly				

				165					170					175	
Gly	Arg	Met	Ala	Glu	Pro	Ala	Ser	Tyr	Lys	Leu	Thr	Glu	Ser	Ile	Ala
			180					185					190		
Glu	His	Gly	Ile	Glu	Tyr	Gly	Arg	Met	Lys	Thr	Gly	Thr	Pro	Val	Arg
		195					200					205			
Ile	Asp	Gly	Arg	Ser	Val	His	Tyr	Glu	Leu	Met	Asp	Thr	Gln	Asp	Gly
	210					215					220				
Glu	Cys	Asp	Phe	His	Lys	Phe	Ser	Phe	Met	Asn	Thr	Ser	Val	Arg	His
225					230					235				240	
Leu	Lys	Gln	Leu	Gln	Cys	Trp	Thr	Cys	Phe	Thr	Asn	Glu	Glu	Ala	His
			245						250					255	
Asn	Val	Leu	Arg	Asn	Gly	Leu	Ala	Asp	Ser	Pro	Leu	Phe	Asn	Gly	Gln
			260					265					270		
Ile	Gln	Ser	Ile	Gly	Pro	Arg	Tyr	Cys	Pro	Ser	Ile	Glu	Thr	Lys	Ile
		275					280					285			
Val	Thr	Phe	Pro	Asp	Lys	Glu	Gln	His	Gln	Leu	Phe	Leu	Glu	Pro	Glu
	290					295					300				
Gly	Glu	Thr	Thr	Gln	Glu	Leu	Tyr	Leu	Asn	Gly	Phe	Ser	Ser	Ser	Leu
305					310					315					320
Pro	Met	Glu	Ile	Gln	Ile	Glu	Ala	Leu	Lys	Lys	Ile	Pro	Ala	Phe	Lys
			325						330					335	
Asp	Leu	Val	Ile	Tyr	Arg	Pro	Gly	Tyr	Ala	Ile	Glu	Tyr	Asp	Tyr	Phe
		340						345					350		
Asp	Pro	Thr	Gln	Leu	Lys	His	Thr	Leu	Glu	Ser	Lys	Lys	Ile	Lys	Asn
		355					360					365			
Leu	Phe	Phe	Ala	Gly	Gln	Val	Asn	Gly	Thr	Thr	Gly	Tyr	Glu	Glu	Ala
	370					375					380				
Gly	Gly	Gln	Gly	Ile	Ile	Ala	Gly	Ile	Asn	Ala	His	Ile	Asn	Cys	His
385					390					395					400
Gly	Gly	Glu	Pro	Phe	Thr	Leu	Ala	Arg	Asp	Glu	Ala	Tyr	Ile	Gly	Val
			405						410					415	
Leu	Ile	Asp	Asp	Leu	Val	Thr	Lys	Gly	Val	Asp	Glu	Pro	Tyr	Arg	Met
		420						425					430		
Phe	Thr	Ser	Arg	Ala	Glu	Tyr	Arg	Ile	Leu	Leu	Arg	Met	Asp	Asp	Ala
		435					440					445			
Asp	Met	Arg	Leu	Thr	Glu	Arg	Ala	Tyr	Lys	Leu	Gly	Leu	Val	Lys	Glu
	450					455					460				
Asp	Arg	Tyr	Ala	Leu	Leu	Lys	Ser	Lys	Arg	Glu	Ala	Val	Glu	Asn	Ile
465					470					475					480
Val	Asn	Phe	Thr	Arg	Asn	Tyr	Ser	Ile	Lys	Ala	Ala	Leu	Ile	Asn	Asp
			485						490					495	
Ala	Leu	Glu	Asn	Leu	Gly	Thr	Thr	Pro	Leu	Arg	Gln	Gly	Cys	Lys	Leu
			500					505					510		
Ile	Asp	Leu	Ile	Asn	Arg	Pro	Gln	Ile	Thr	Ile	Glu	Asn	Ile	Ser	Glu
		515					520					525			
Tyr	Val	Pro	Ala	Phe	Lys	Arg	Glu	Leu	Asp	Lys	Ile	Thr	Asp	Glu	Arg
	530					535						540			
Lys	Glu	Glu	Ile	Leu	Glu	Ala	Ala	Glu	Ile	Leu	Ile	Lys	Tyr	Glu	Gly
545					550					555					560
Tyr	Ile	Gly	Arg	Glu	Arg	Ile	Ile	Ala	Asp	Lys	Leu	Ala	Arg	Leu	Glu
			565						570					575	
Ser	Ile	Lys	Ile	Lys	Gly	Lys	Phe	Asp	Tyr	Asp	Ser	Leu	Gln	Ser	Leu
		580						585					590		
Ser	Thr	Glu	Ala	Arg	Gln	Lys	Leu	Lys	Lys	Ile	Asp	Pro	Glu	Thr	Ile
		595					600					605			
Ala	Gln	Ala	Ser	Arg	Ile	Pro	Gly	Val	Ser	Pro	Ser	Asp	Ile	Asn	Val
	610					615						620			
Leu	Leu	Val	Leu	Ser	Gly	Arg									
625					630										

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<210> 7769  
 <211> 454  
 <212> PRT  
 <213> B.fragilis

<400> 7769

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Ala	Lys	Thr	Phe	Gln	Gly	Leu	Glu	Glu	Ile	Leu	Ala	Glu	Glu	Leu	Thr
			20					25					30		
Thr	Leu	Gly	Ala	Asn	Asp	Val	Gln	Ile	Gly	Arg	Arg	Met	Val	Ser	Phe
		35					40					45			
Thr	Gly	Asp	Lys	Glu	Met	Met	Tyr	Lys	Ala	Asn	Phe	Cys	Leu	Arg	Thr
	50					55					60				
Ala	Ile	Arg	Ile	Leu	Lys	Pro	Ile	Lys	His	Phe	Thr	Ala	Lys	Asp	Ala
65					70					75					80
Asp	Ala	Val	Tyr	Glu	Gln	Ile	Lys	Ala	Ile	Arg	Trp	Glu	Glu	Ile	Leu
				85					90					95	
Asp	Val	Asp	Lys	Thr	Phe	Ala	Val	Asp	Ala	Val	Val	Phe	Ser	Asp	Glu
			100					105					110		
Phe	Arg	His	Ser	Lys	Phe	Val	Ser	Tyr	Lys	Val	Lys	Asp	Ala	Ile	Val
		115					120					125			
Asp	Tyr	Phe	Arg	Glu	Leu	Asn	Gly	Lys	Arg	Pro	Ser	Val	Arg	Ile	Ser
	130					135					140				
Arg	Pro	Asp	Val	Leu	Leu	Asn	Ile	His	Ile	Ala	Gln	Thr	Thr	Cys	Thr
145					150					155					160
Leu	Ser	Leu	Asp	Ser	Ser	Gly	Glu	Ser	Leu	His	Arg	Arg	Gly	Tyr	Arg
				165					170					175	
Gln	Glu	Ala	Val	Glu	Ala	Pro	Leu	Asn	Glu	Val	Leu	Ala	Ala	Gly	Met
			180					185					190		
Ile	Leu	Met	Thr	Gly	Trp	Lys	Gly	Glu	Cys	Asp	Leu	Ile	Asp	Pro	Met
		195					200					205			
Cys	Gly	Ser	Gly	Thr	Ile	Pro	Ile	Glu	Ala	Ala	Leu	Ile	Ala	Arg	Asn
	210					215					220				
Ile	Ala	Pro	Gly	Val	Phe	Arg	Lys	Glu	Phe	Ala	Phe	Glu	Lys	Trp	Gly
225					230					235					240
Asp	Phe	Asp	Gln	Asn	Leu	Phe	Asp	Arg	Ile	Tyr	Asn	Asp	Asp	Ser	Gln
				245					250					255	
Glu	Arg	Glu	Phe	Thr	His	Lys	Ile	Tyr	Gly	Tyr	Asp	Asn	Asn	Pro	Lys
			260					265					270		
Ala	Asn	Glu	Ile	Ala	Thr	His	Asn	Val	Lys	Ala	Ala	Gly	Val	Ser	Lys
		275					280					285			
Asp	Ile	Ile	Leu	Lys	Leu	Gln	Pro	Phe	Gln	Gln	Phe	Glu	Gln	Pro	Ala
	290					295					300				
Glu	Lys	Ser	Ile	Ile	Ile	Thr	Asn	Pro	Pro	Tyr	Gly	Glu	Arg	Ile	Ser
305					310					315					320
Thr	Asn	Asp	Leu	Leu	Gly	Leu	Tyr	Asn	Met	Ile	Gly	Glu	Arg	Leu	Lys
				325					330					335	
His	Ala	Phe	Val	Gly	Asn	Asp	Ala	Trp	Ile	Leu	Ser	Tyr	Arg	Glu	Glu
			340					345					350		
Cys	Phe	Asp	Gln	Ile	Gly	Leu	Lys	Pro	Ser	Val	Lys	Thr	Pro	Leu	Phe
		355					360					365			
Asn	Gly	Pro	Leu	Glu	Cys	Glu	Phe	Arg	Lys	Tyr	Gln	Ile	Phe	Asp	Gly
	370					375					380				
Lys	Tyr	Lys	Glu	Phe	Lys	Ser	Gln	Glu	Gly	Gly	Asp	Glu	Asn	Gly	Glu
385					390					395					400
Arg	Ala	Pro	Lys	Glu	Arg	Arg	Glu	Phe	Lys	Pro	Arg	Arg	Glu	Glu	Gly
				405					410					415	

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<213> B.fragilis
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Ser 1	Ile	Leu	Ile	Met 5	Asn	Lys	Thr	Phe	Val 10	Gly	Phe	Ile	Phe	Leu 15	Leu
Phe	Leu	Val	Gly 20	Gly	Val	Val	Ser	Cys 25	Gln	Arg	Ser	Ser	Ser	Pro 30	Tyr
Pro	Tyr	Ser	Leu 35	Arg	Tyr	Ala	Asp 40	Ser	Leu	Met	Glu	Ile 45	Ser	Pro	Glu
Arg	Thr 50	Leu	Ala	Tyr	Leu	Arg 55	Lys	Leu	Asp	Val	Ser 60	Thr	Tyr	Ser	Ala
Gly 65	Asp	Arg	Ala	Tyr 70	Phe	Ser	Leu	Leu	Phe	Thr 75	Gln	Ala	Thr	Asp	Lys 80
Asn	Met	Leu	Ser 85	Leu	Leu	Pro	Cys	Asp	Ser 90	Leu	Ile	Asp	Thr	Ala 95	Leu
Asp	Tyr	Tyr	Ile 100	Lys	Lys	Asp	Gly	Val 105	Asn	Leu	Ala	Lys 110	Ala	Trp	Leu
Tyr	Lys	Gly 115	Arg	Ile	Gln	Lys	Lys 120	Met	Asn	Met	Thr	Glu 125	Gln	Ala	Leu
Lys	Ser 130	Cys	Phe	Thr	Ala	Leu 135	Gln	Gly	Val	Glu	Gly 140	Asn	Thr	Gly	Glu
Glu 145	Leu	Lys	Leu	Lys	Gly 150	Met	Leu	Tyr	Glu	Asp 155	Met	Gly	Ser	Ile 160	Tyr
Leu	His	Gln	Ser 165	Leu	Tyr	Gln	Lys	Ala	Phe 170	Asp	Ala	Phe	Tyr	Arg 175	Ser
Tyr	Gln	Cys	Asp 180	Ser	Leu	Leu	Asn	Asp 185	His	Arg	Leu	Val 190	Met	Tyr	Pro
Leu	Ser	Asn 195	Met	Gly	Trp	Val	Arg 200	Val	Ile	Gln	Gly	Lys 205	Thr	Val	Glu
Ala	Phe 210	Tyr	Tyr	Leu	Asn 215	Gln	Ser	Ile	Gln	Leu	Ala 220	Leu	Arg	Leu	Asn
Asp 225	Ser	Ala	Phe	Val	Ser 230	Asp	Ile	Tyr	Glu	Arg 235	Met	Ser	Leu	Asn 240	Cys
Glu	Asn	Val	Asp 245	Ser	Ala	Phe	Leu	Tyr	Ala 250	His	Leu	Ser	His	Gln 255	Tyr
Leu	Thr	Lys 260	Asp	Gly	Asp	Ser	Ile	Ser 265	Leu	Trp	Leu	Thr 270	Phe	Gly	Asp
Leu	Tyr 275	Leu	Asp	Lys	Gln	Glu	Leu 280	Asp	Ser	Ala	Glu	Tyr 285	Tyr	Leu	Lys
Arg	Ile 290	Leu	Asp	Thr	Ala	Asp 295	Phe	Lys	Arg	Lys	Ile 300	Leu	Ala	Ser	Tyr
Ser 305	Leu	Ala	Glu	Val	Glu 310	Lys	Ile	Arg	Gly	Asn 315	Tyr	Gln	Arg	Ala	Phe
Glu	Tyr	Gln	Ser 325	Tyr	Tyr	Gly	Asp	Asn 330	Ile	Asp	Ser	Ile 335	Phe	Leu	Leu
Asn	Lys	Ala 340	Ser	Asp	Ile	Glu	Arg 345	Leu	Ala	Tyr	Lys	Tyr 350	Asp	Ser	Glu
Ala	Lys 355	Val	Val	Lys	Glu	Lys	Glu 360	Lys	Gln	Arg	Phe 365	Phe	Ile	Gln	Gln

Leu Cys Tyr Gly Gly Val Leu Phe Leu Leu Val Ile Ala Ile Ile Phe  
 370 375 380  
 Gln Arg Ile Tyr Arg Arg Arg Gln Ile Ala Arg Leu Leu Tyr Glu Gln  
 385 390 395 400  
 Arg Ile Thr Tyr Leu Asn Glu Lys Thr Ala Leu Ser Gln Leu Gln Ile  
 405 410 415  
 Glu Arg Leu Glu Val Gln Ile Ser Ala Leu Lys Gln Ser Gly Met Glu  
 420 425 430  
 Arg Glu Gln Glu Ile Asp Leu Lys Gln Ala Glu Leu Cys Cys Val Ile  
 435 440 445  
 Asp Glu Lys Ala Arg Leu Arg Asn Cys Leu Phe Met Glu Thr Ser Ile  
 450 455 460  
 Phe Lys His Ile Arg Glu Leu Ser Thr Gln Pro Arg Leu Gly Gln Asn  
 465 470 475 480  
 Gly Thr Lys Gly Ser Pro Lys Val Leu Leu Met Lys Glu Gln Glu Gln  
 485 490 495  
 Leu Lys Asn Ile Leu Phe Gly Ile Tyr Asp Asp Tyr Ile Arg Tyr Leu  
 500 505 510  
 Lys Gly Thr Tyr Pro Lys Ile Thr Asp Asn Asp Cys Ile Tyr Cys Cys  
 515 520 525  
 Leu Lys Leu Cys Glu Phe Asp Asp Gln Thr Ile Ala Tyr Cys Phe Gly  
 530 535 540  
 Asn Val Ser Lys Gln Ile Val Ala Gln Arg Arg Leu Arg Leu Lys Lys  
 545 550 555 560  
 Lys Met Ala Glu Ala Asn  
 565

&lt;210&gt; 7771

&lt;211&gt; 312

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7771

Val Thr Ile Met Glu Thr Lys Ile Asn Ser Lys Ala Leu Lys Ala Glu  
 1 5 10 15  
 Ala Leu Arg Leu Gly Phe Ser Ala Cys Gly Ile Ala Pro Ala Glu Pro  
 20 25 30  
 Ile Asp Gln Ala His Gln Asn Ala Leu Lys Met Trp Leu Asp Ala Asp  
 35 40 45  
 Arg Gln Ala Gly Met Thr Tyr Met Ala Asn His Phe Asp Lys Arg Cys  
 50 55 60  
 Asp Pro Ala Leu Leu Val Glu Gly Thr Arg Cys Val Val Ser Val Ala  
 65 70 75 80  
 Leu Asn Tyr Tyr Pro Ala Thr Arg Ile Pro Asp Glu Glu Tyr Gln Phe  
 85 90 95  
 Ala Trp Tyr Ala Tyr Gly Lys Asp Tyr His Asp Leu Met Arg Glu Lys  
 100 105 110  
 Leu Ala Ala Leu Phe Arg Phe Ile Gln Glu Ser Asp Val Pro Glu Leu  
 115 120 125  
 Asn Gly Arg Met Phe Cys Asp Thr Ala Pro Val Pro Glu Arg Tyr Trp  
 130 135 140  
 Ala Trp Arg Ala Gly Leu Gly Trp Ile Gly Lys Asn Thr Gln Leu Ile  
 145 150 155 160  
 Ile Pro His Ala Gly Ser Thr Phe Phe Leu Gly Glu Leu Phe Leu Asn  
 165 170 175  
 Ala Glu Ala Asp Thr Tyr Asp Arg Pro Gln Pro Asn Arg Cys Gly Arg  
 180 185 190  
 Cys Asn Arg Cys Leu Gln Ala Cys Pro Thr Lys Ala Leu Glu Thr Pro  
 195 200 205

Tyr Ser Leu Asn Ala His Arg Cys Leu Ser Tyr Leu Thr Ile Glu Asn  
 210 215 220  
 Lys Ser Glu Ile Pro Asp Ser Ile Ala Pro Phe Met Gly Asn Arg Val  
 225 230 235 240  
 Tyr Gly Cys Asp Glu Cys Gln Lys Ala Cys Pro Trp Asn Arg Phe Ala  
 245 250 255  
 Thr Pro Cys Arg Thr Pro Glu Leu Gln Pro Ser Pro Glu Phe Met Asn  
 260 265 270  
 Met Lys Lys Glu Asp Trp Lys Gln Leu Ser Glu Glu Lys Tyr Arg Ala  
 275 280 285  
 Leu Phe Lys Gly Ser Ala Val Lys Arg Ala Lys Tyr Ser Gly Leu Ile  
 290 295 300  
 Arg Asn Ile Arg Gln Met Glu Asp  
 305 310

<210> 7772  
 <211> 240  
 <212> PRT  
 <213> B.fragilis

<400> 7772  
 Gln Pro Ser Ile Thr Phe Asp Arg Ser Pro Ala Lys Thr Glu Glu Asp  
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 Arg Pro Arg Asn Asn Ser Ser Gly Lys Pro His Pro Arg Arg Val Thr  
 20 25 30  
 Lys Arg His Gln Cys Ile Ile Ser Ala Phe Gly Thr Ile Asp Cys Cys  
 35 40 45  
 Val Ser Arg Glu Thr Lys His Leu Lys Lys Gln His Lys Arg Met Ile  
 50 55 60  
 Met Ser Lys Glu Lys Leu Ile Lys Ser Ile Arg Glu Ile Pro Asp Phe  
 65 70 75 80  
 Pro Ile Pro Gly Ile Leu Phe Tyr Asp Val Thr Thr Leu Phe Lys Asp  
 85 90 95  
 Ser Glu Arg Leu Gln Glu Leu Ser Asp Ile Met Tyr Glu Met Tyr Lys  
 100 105 110  
 Asp Lys Gly Ile Thr Lys Val Val Gly Ile Glu Ser Arg Gly Phe Ile  
 115 120 125  
 Met Gly Pro Ile Leu Ala Thr Arg Leu Gly Thr Gly Phe Ile Pro Ile  
 130 135 140  
 Arg Lys Pro Gly Lys Leu Pro Ala Glu Thr Met Glu Glu Ser Phe His  
 145 150 155 160  
 Lys Glu Tyr Gly Lys Asp Ser Val Gln Ile His Lys Asp Ala Leu Asn  
 165 170 175  
 Glu Asn Asp Val Val Leu Leu His Asp Asp Leu Leu Ala Thr Val Gly  
 180 185 190  
 Thr Met Lys Ala Ala Cys Asn Leu Val Lys Lys Leu His Pro Lys Lys  
 195 200 205  
 Val Tyr Val Asn Phe Ile Ile Glu Leu Lys Glu Leu Asn Gly Lys Gln  
 210 215 220  
 Val Phe Glu Asn Asp Gln Asp Val Asp Ile Gln Ser Val Leu Ser Leu  
 225 230 235 240

<210> 7773  
 <211> 679  
 <212> PRT  
 <213> B.fragilis

<400> 7773  
 Ile Lys Thr Met Arg His Arg Ala Asn Leu Ala Ile Val Phe Phe Cys

[illegible]

[illegible]

Case	Age	Sex	Occupation	Duration	Location
1	25	M	Student	10 days	Home
2	30	F	Teacher	15 days	Home
3	35	M	Engineer	20 days	Home
4	40	F	Homemaker	25 days	Home
5	45	M	Manager	30 days	Home
6	50	F	Retired	35 days	Home
7	55	M	Farmer	40 days	Home
8	60	F	Shopkeeper	45 days	Home
9	65	M	Retired	50 days	Home
10	70	F	Homemaker	55 days	Home

<400>	7774															
Pro	Lys	Glu	Met	Phe	Ile	Glu	Gln	Pro	Pro	Trp	Phe	Phe	Arg	Ala	Ile	
1				5					10					15		
Tyr	Pro	Asp	Ala	Ile	Phe	Arg	Met	Asp	Pro	Asp	Glu	Lys	Ala	Val	Tyr	
			20					25					30			
Leu	Thr	Phe	Asp	Asp	Gly	Pro	Ile	Pro	Glu	Val	Thr	Pro	Trp	Val	Leu	
		35					40					45				
Glu	Leu	Leu	Asp	Lys	His	Asn	Ile	Lys	Ala	Thr	Phe	Phe	Met	Val	Gly	
		50				55					60					
Asp	Asn	Ile	Arg	Lys	His	Pro	Asp	Val	Phe	Arg	Met	Val	Val	Glu	Arg	
65					70					75					80	
Gly	His	Arg	Ile	Gly	Asn	His	Thr	Phe	Asn	His	Ile	Arg	Gly	Phe	Glu	
				85					90					95		
Tyr	Leu	Ser	Ser	Asn	Tyr	Leu	Ala	Asn	Thr	Asp	Lys	Ala	Asn	Glu	Met	
			100					105					110			
Met	Lys	Thr	Asp	Leu	Phe	Arg	Pro	Pro	His	Gly	His	Met	Arg	Trp	Met	
			115				120					125				
Gln	Tyr	Met	Thr	Leu	Lys	Arg	His	Tyr	Lys	Ile	Ile	Met	Trp	Asp	Leu	
		130				135					140					
Val	Thr	Arg	Asp	Tyr	Ser	Lys	Lys	Leu	Arg	Pro	Pro	Gln	Val	Leu	Ala	
145					150					155					160	
Asn	Val	Met	Arg	Tyr	Ala	Arg	Asn	Gly	Ser	Ile	Ile	Thr	Phe	His	Asp	
				165					170					175		
Ser	Leu	Lys	Ser	Trp	Asn	Asn	Gly	Asn	Leu	Gln	Tyr	Ala	Leu	Pro	Arg	
			180					185					190			
Ala	Ile	Asp	Phe	Leu	Lys	Glu	Glu	Gly	Tyr	Glu	Phe	Arg	Leu	Leu		
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<210> 7775  
 <211> 371  
 <212> PRT  
 <213> B.fragilis

<400> 7775

Thr Tyr Phe Val Lys Glu Lys Leu Cys Glu Thr Leu Pro Tyr Tyr Val  
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 Ala Lys Ser Ile Ser Leu Leu Pro Ile Tyr Lys Lys Gly Met Glu Glu  
 20 25 30  
 Asp Phe Asn Ile Arg Asp His Gln Leu Thr Ser Arg Glu Arg Asp Phe  
 35 40 45  
 Glu Asn Ala Leu Arg Pro Leu Ser Phe Glu Asp Phe Asn Gly Gln Asp  
 50 55 60  
 Lys Val Val Asp Asn Leu Arg Ile Phe Val Lys Ala Ala Arg Leu Arg  
 65 70 75 80  
 Ala Glu Ala Leu Asp His Val Leu Leu His Gly Pro Pro Gly Leu Gly  
 85 90 95  
 Lys Thr Thr Leu Ser Asn Ile Ile Ala Asn Glu Leu Gly Val Gly Phe  
 100 105 110  
 Lys Val Thr Ser Gly Pro Val Leu Asp Lys Pro Gly Asp Leu Ala Gly  
 115 120 125  
 Val Leu Thr Ser Leu Glu Pro Asn Asp Val Leu Phe Ile Asp Glu Ile  
 130 135 140  
 His Arg Leu Ser Pro Val Val Glu Glu Tyr Leu Tyr Ser Ala Met Glu  
 145 150 155 160  
 Asp Tyr Arg Ile Asp Ile Met Ile Asp Lys Gly Pro Ser Ala Arg Ser  
 165 170 175  
 Ile Gln Ile Asp Leu Asn Pro Phe Thr Leu Val Gly Ala Thr Thr Arg  
 180 185 190  
 Ser Gly Leu Leu Thr Ala Pro Leu Arg Ala Arg Phe Gly Ile Asn Leu  
 195 200 205  
 His Leu Glu Tyr Tyr Asp Asp Ile Leu Ser Asn Ile Ile Ser Arg  
 210 215 220  
 Ser Ala Gly Ile Leu Asp Val Pro Cys Ser Ser Gln Ala Ala Gly Glu  
 225 230 235 240  
 Ile Ala Ser Arg Ser Arg Gly Thr Pro Arg Ile Ala Asn Ala Leu Leu  
 245 250 255  
 Arg Arg Val Arg Asp Phe Ala Gln Val Lys Gly Ser Gly Ser Ile Asp  
 260 265 270  
 Thr Glu Ile Ala Asn Tyr Ala Leu Glu Ala Leu Asn Ile Asp Lys Tyr  
 275 280 285  
 Gly Leu Asp Glu Ile Asp Asn Lys Ile Leu Cys Thr Ile Ile Asp Lys  
 290 295 300  
 Phe Lys Gly Gly Pro Val Gly Leu Thr Thr Ile Ala Thr Ala Leu Gly  
 305 310 315 320  
 Glu Asp Ala Gly Thr Ile Glu Glu Val Tyr Glu Pro Phe Leu Ile Lys  
 325 330 335  
 Glu Gly Phe Leu Lys Arg Thr Pro Arg Gly Arg Glu Val Thr Glu Leu  
 340 345 350  
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 355 360 365  
 Phe Asn Asp  
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<210> 7776  
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&lt;213&gt; B.fragilis

&lt;400&gt; 7776

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 20 25 30  
 Ser Leu Ser Leu Ile Lys Ser Pro Ile Thr Thr Glu Leu Glu Asp Phe  
 35 40 45  
 Lys Asn Leu Phe Asp Ser Ser Leu Ser Ser Ser Asn Leu Leu Leu Asn  
 50 55 60  
 Asn Val Ile Ala His Ile Arg Gln Arg Asn Gly Lys Met Met Arg Pro  
 65 70 75 80  
 Ile Leu Val Leu Leu Val Ala Lys Leu Tyr Gly Glu Ile Lys Pro Glu  
 85 90 95  
 Thr Leu His Ala Ala Val Ser Leu Glu Leu Leu His Thr Ala Ser Leu  
 100 105 110  
 Val His Asp Asp Val Val Asp Glu Ser Thr Glu Arg Arg Gly Gln Leu  
 115 120 125  
 Ser Val Asn Ala Ile Phe Asn Asn Lys Val Ala Val Leu Val Gly Asp  
 130 135 140  
 Phe Leu Leu Ala Thr Ser Leu Val His Ala Glu Arg Thr Arg Asn His  
 145 150 155 160  
 Asp Ile Ile Gly Val Val Ala Cys Leu Gly Gln Asp Leu Ala Glu Gly  
 165 170 175  
 Glu Ile Leu Gln Leu Ser Asn Val Ser Asn Arg Glu Tyr Ser Glu Thr  
 180 185 190  
 Ile Tyr Phe Asp Val Ile Arg Lys Lys Thr Ala Ala Leu Phe Ala Ala  
 195 200 205  
 Cys Thr Lys Ala Ala Ala Leu Ser Val Glu Val Thr Asp Glu Lys Ala  
 210 215 220  
 Glu Phe Ala Arg Leu Phe Gly Glu Asn Ile Gly Ile Cys Phe Gln Ile  
 225 230 235 240  
 Lys Asp Asp Ile Phe Asp Tyr Phe Glu Ser Lys Glu Ile Gly Lys Pro  
 245 250 255  
 Thr Gly Asn Asp Met Leu Glu Gly Lys Leu Thr Leu Pro Ala Leu Tyr  
 260 265 270  
 Val Leu Asn Thr Thr Thr Asp Ala Trp Ala Gln Glu Met Ala Leu Arg  
 275 280 285  
 Val Lys Ala Gly Thr Ala Thr Val Asp Glu Ile Thr Arg Leu Ile Glu  
 290 295 300  
 Phe Ile Lys Gln Asn Gly Gly Ile Glu Tyr Ala Val Lys Val Met Tyr  
 305 310 315 320  
 Glu Tyr Lys Glu Arg Ala Leu Asp Leu Leu Arg Thr Leu Pro Asp Ser  
 325 330 335  
 Ala Val Lys Thr Ser Leu Ile Thr Tyr Leu Asp Tyr Val Val Asp Arg  
 340 345 350  
 Asp Lys

&lt;210&gt; 7777

&lt;211&gt; 136

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7777

Asn Phe Val Val Lys Tyr Lys Leu Ile Ile Met Lys Lys Val Phe Phe  
 1 5 10 15  
 Leu Tyr Cys Ile Ser Leu Leu Cys Ile Tyr Gly Cys Asn Asp Asp Ser



20	25	30
Asp Lys Tyr Ser Ser Asn Phe Leu Lys Ser Arg Glu Val Thr Leu Asn		
35	40	45
Ala Glu Gly Gly Asp Ile Thr Val Glu Gly Arg Glu Lys Phe Ile Leu		
50	55	60
Val Gln Thr Glu Glu Ile Leu Asn Gln Asp Thr Ile Phe Ser Ile Gly		
65	70	75
Glu Ile Asn Gly Val Glu Tyr Gln Gly Gly Trp Tyr Gln Leu Glu Val		
85	90	95
Asn Gly Lys Glu Met Thr Leu Asn Cys Asp Arg Asn Leu Thr Gly Asn		
100	105	110
Lys Arg Lys Val Val Leu His Phe Gln Gly Thr Gly Asn Ser Phe Asp		
115	120	125
Val Phe Ser Leu Thr Gln Leu Glu		
130	135	

&lt;210&gt; 7778

&lt;211&gt; 1001

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7778

Ala Ile Thr Leu Leu Ser Lys Arg Phe Glu Leu Asp Arg Glu Leu Ser		
1	5	10
Asn Arg Phe Leu Lys Ser Ser Ser Ser Val Val Ile Gly Asp Phe Ile		15
20	25	30
Lys Asp Lys Leu Ser Met His Thr Leu Phe Glu His Lys Ser Asn Asn		
35	40	45
Lys Thr Val Asn Thr Val Phe Phe Cys Thr Phe Thr Met Lys Lys Leu		
50	55	60
Lys Asn Met Asn Gln Asn Ser Lys Leu Phe Leu Leu Asp Ala Tyr Ala		
65	70	75
Leu Ile Tyr Arg Ala Tyr Tyr Ala Phe Ile Lys Asn Pro Arg Ile Asn		
85	90	95
Ser Lys Gly Phe Asn Thr Ser Ala Ile Leu Gly Phe Val Asn Thr Leu		
100	105	110
Glu Glu Val Leu Lys Lys Glu Asn Pro Thr His Ile Gly Val Ala Phe		
115	120	125
Asp Pro Pro Gly Pro Thr Phe Arg His Glu Ala Phe Glu Gln Tyr Lys		
130	135	140
Ala Gln Arg Glu Glu Thr Pro Glu Ala Ile Arg Leu Ser Val Pro Ile		
145	150	155
Ile Lys Asp Ile Ile Lys Ala Tyr Arg Ile Pro Ile Leu Glu Val Ala		
165	170	175
Gly Tyr Glu Ala Asp Asp Val Ile Gly Thr Leu Ala Thr Glu Ala Gly		
180	185	190
Asn Gln Gly Ile Thr Thr Tyr Met Met Thr Pro Asp Lys Asp Tyr Gly		
195	200	205
Gln Leu Val Thr Asp His Val Phe Met Tyr Arg Pro Lys Tyr Gly Asp		
210	215	220
Lys Glu Phe Glu Val Met Gly Val Glu Gln Val Lys Ala Lys Phe Asp		
225	230	235
Ile Gln Ser Pro Ala Gln Val Ile Asp Met Leu Gly Leu Met Gly Asp		
245	250	255
Ser Ser Asp Asn Ile Pro Gly Cys Pro Gly Val Gly Glu Lys Thr Ala		
260	265	270
Gln Lys Leu Ile Ala Glu Phe Gly Ser Ile Glu Asn Leu Leu Glu His		
275	280	285
Thr Asp Gln Leu Lys Gly Ala Leu Lys Thr Lys Val Glu Thr Asn Arg		

[illegible]

Asp Asp Gly Cys Ser Phe Phe Ser Ala Asp Tyr Ser Gln Ile Glu Leu  
 770 775 780  
 Arg Ile Met Ala His Leu Ser Glu Asp Lys Asn Met Ile Asp Ala Phe  
 785 790 795 800  
 Leu Ser Gly Tyr Asp Ile His Ala Ala Thr Ala Ala Lys Ile Tyr Lys  
 805 810 815  
 Val Asp Ile Lys Glu Val Thr Ala Asp Met Arg Arg Lys Ala Lys Thr  
 820 825 830  
 Ala Asn Phe Gly Ile Ile Tyr Gly Ile Ser Val Phe Gly Leu Ala Glu  
 835 840 845  
 Arg Met Asn Val Asp Arg Lys Glu Ala Lys Glu Leu Ile Asp Gly Tyr  
 850 855 860  
 Phe Glu Thr Tyr Pro Gln Val Lys Ser Tyr Met Asp Lys Ser Ile Gln  
 865 870 875 880  
 Val Ala Arg Glu His Gly Tyr Val Glu Thr Ile Phe His Arg Lys Arg  
 885 890 895  
 Phe Leu Pro Asp Ile Asn Ser Arg Asn Ala Val Val Arg Gly Tyr Ala  
 900 905 910  
 Glu Arg Asn Ala Ile Asn Ala Pro Ile Gln Gly Ser Ala Ala Asp Ile  
 915 920 925  
 Ile Lys Val Ala Met Ala Arg Ile Tyr Glu Arg Phe Lys Ala Glu Gly  
 930 935 940  
 Leu Lys Ala Lys Met Ile Leu Gln Val His Asp Glu Leu Asn Phe Ser  
 945 950 955 960  
 Val Pro Ala Lys Glu Lys Glu Ile Val Glu Gln Val Val Ile Glu Glu  
 965 970 975  
 Met Glu Lys Ala Tyr Arg Met His Val Pro Leu Lys Ala Asp Cys Gly  
 980 985 990  
 Trp Gly Thr Asn Trp Leu Glu Ala His  
 995 1000

<210> 7779  
 <211> 256  
 <212> PRT  
 <213> B.fragilis

<400> 7779

Ser Leu Ile Ser Lys Trp Asn Ala Leu Pro Lys Met Lys Pro Asn Lys  
 1 5 10 15  
 Phe Ile Ile Glu Lys Gln Val Ser Glu Phe Arg Met Asp Asn Gly Leu  
 20 25 30  
 Ser Ala Thr Glu Pro Ile Thr Leu Lys Ser Leu Leu Leu Lys Leu Asn  
 35 40 45  
 Ile Leu Thr Val Phe Arg Pro Leu Ser Asp Asn Phe Ser Gly Met Cys  
 50 55 60  
 Leu Lys Asp Asn Ser Glu His Arg Phe Met Leu Ile Asn Ser Asn Gln  
 65 70 75 80  
 Pro Arg Gly Arg Gln His Phe Thr Ile Ala His Glu Leu Tyr His Leu  
 85 90 95  
 Tyr Ile Glu Lys Lys Pro Thr Pro His Lys Cys Asn Pro Gly Cys Ala  
 100 105 110  
 Ser Lys Asp Pro Ile Glu Gln Cys Ala Asp Met Phe Ala Ser Ser Leu  
 115 120 125  
 Leu Met Pro Glu Gly Gly Ile Cys Gln Leu Ile Pro Glu Met Glu Leu  
 130 135 140  
 Lys Thr Lys Asn Ile Ser Met Ala Thr Val Leu Lys Leu Glu His Tyr  
 145 150 155 160  
 Phe Ser Val Ser Arg Ser Ala Leu Leu Tyr Arg Leu Gln Asn Ile Gly  
 165 170 175

Leu Ile Thr Glu Ser Thr Arg Ser Gln Leu Ala Glu Ile Lys Val Lys  
 180 185 190  
 Tyr Ser Ala Lys Cys Phe Gly Tyr Asp Thr Ala Leu Tyr Glu Pro Ala  
 195 200 205  
 Asn Glu Gly Leu Val Ile Gly Asp Phe Gly Glu Lys Ala Arg Lys Leu  
 210 215 220  
 Phe Glu Gln Glu Lys Ile Ser Glu Gly His Tyr Ile Glu Leu Leu His  
 225 230 235 240  
 Lys Ile Asn Ile Asn Gly Thr Gln Glu Asn Glu Asp Ser Thr Leu Cys  
 245 250 255

<210> 7780  
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 <213> B.fragilis

<400> 7780  
 Gln Thr Arg Phe Ala Phe Ser Leu Gln Lys Phe Pro Val Leu Glu Asn  
 1 5 10 15  
 Phe Leu Tyr Gln Glu Glu Arg Lys Val Leu Gln Lys Phe Leu Leu Lys  
 20 25 30  
 Gln Glu Gln Leu Ile Ala Leu Thr Val Thr Phe Val Ala Asp Phe Ser  
 35 40 45  
 Thr Lys Lys Arg Phe Ser His Lys Gly Thr Leu Cys Lys Ser Ala Thr  
 50 55 60  
 Val Pro Ala Ala Val Ile Leu  
 65 70

<210> 7781  
 <211> 266  
 <212> PRT  
 <213> B.fragilis

<400> 7781  
 His Thr Asn Ser Val Thr Val Asn Leu Leu Phe Thr Gln Thr Asn Leu  
 1 5 10 15  
 Leu Met Lys Thr Asn Phe Cys Arg Phe Leu Ile Gly Leu Val Ala Phe  
 20 25 30  
 Val Val Gly Ile Pro Val Met Ala Gln Thr Gly Pro Asp Lys Val Lys  
 35 40 45  
 Pro Phe Ser His Leu Ser Val Ser Leu Asn Ala Gly Thr Leu Gly Gly  
 50 55 60  
 Gly Leu Gln Val Ala Ala Pro Leu Asn Asp Tyr Leu Gly Leu Arg Ala  
 65 70 75 80  
 Gly Phe Ser Leu Leu Lys Phe Lys Cys Asn Tyr Asp Tyr Asp Gly Ile  
 85 90 95  
 Arg Asp Asp Gln Leu Ile Gln Asp Ala Gly Thr Arg Thr Gly Tyr Asn  
 100 105 110  
 Pro Asp Lys Tyr Tyr Thr Val Pro Leu Lys Ala Lys Ala Asn Met Thr  
 115 120 125  
 Asn Gly Met Leu Leu Leu Asp Tyr Phe Pro Phe Lys Arg Ser Val Phe  
 130 135 140  
 His Val Thr Ala Gly Leu Leu Phe Gly Thr Ser Ser Ile Leu Lys Val  
 145 150 155 160  
 Ser Gly Gln Thr Asp Glu Arg Ile Glu Val Gly Asp Ile Ile Ile Glu  
 165 170 175  
 Pro Gly Ala Asp Gly Arg Val Glu Ala Leu Lys Thr Asn Ala Val  
 180 185 190  
 Lys Pro Tyr Val Gly Ile Gly Phe Gly Arg Ser Val Ala His Ser Arg

195	200	205
Val Gly Phe Lys Phe Glu Leu Gly Ala Met Phe His Gly Asn Pro Lys		
210	215	220
Ile Glu Ala Thr Thr Gly Lys Ile Val Glu Glu Ala Ile Asp Gln Asp		
225	230	235
Leu Ser Arg Phe Asn Lys Phe Leu Lys Asn Phe Lys Ala Tyr Pro Val		
245	250	255
Leu Asn Phe Gln Leu Ser Tyr Arg Ile Phe		
260	265	

<210> 7782  
 <211> 352  
 <212> PRT  
 <213> B.fragilis

<400> 7782

Pro Ile Leu Ser Glu Lys Lys Tyr Ile Cys Phe Arg Lys Ser Thr Leu		
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Gln Phe Met Lys Leu Gln Lys Ile Tyr Arg Gln Leu Trp Met Glu Val		
20	25	30
His Pro Arg Leu Gln Ser Ala Asp Thr Asp Gln Trp Tyr Val Asp Phe		
35	40	45
Ala Asn Arg Leu Leu Pro Leu Phe Glu Lys Ser Glu Leu Thr Gly Gln		
50	55	60
Met Ile His Lys Asn Arg Ala Val Leu Tyr Phe Thr Trp Tyr Leu Glu		
65	70	75
Asp Cys Val Asn Asn Ser Gly Gly Trp Asn Lys Phe Ile Arg Leu His		
85	90	95
Lys Arg Leu Tyr Gly Arg Phe Leu Pro Phe Tyr Thr Leu Thr Gly Ala		
100	105	110
Tyr Ala Asp Asp Glu Ile Asn Phe Glu Asp Val Ser Phe Leu Leu Trp		
115	120	125
Ser Leu Leu Ser Pro Val Thr Asp Asp Ser Pro Val Pro Trp Asn Pro		
130	135	140
Thr Asp Lys Ser Leu Leu Arg Leu Ala Thr Asp Ile Tyr Ala Leu Leu		
145	150	155
Glu Ala His Phe Glu Gln Ala Pro Leu Thr Asp Asp Glu Ser Met Asp		
165	170	175
Trp Leu Pro Glu Ile Arg Ala Leu Leu Pro Pro Pro Gly Pro Val Leu		
180	185	190
Asp Ile Phe Pro Glu Met Glu Leu Pro His Asp Val Thr Lys Phe Leu		
195	200	205
Asn Ala Thr Gln Gly Lys Gln Leu Val Tyr Phe Glu Asp Tyr Ala Gly		
210	215	220
Leu Arg Arg Phe Cys Val Asp Ala Leu Glu Trp Ala Asp Glu Asp Asp		
225	230	235
Ser Leu Met Pro Glu Leu Ala Asp Glu Glu Asn Phe Val Phe Phe Ala		
245	250	255
Asn Pro Lys Gly Ile Leu Leu Ala Pro Asn Ile Gly Ala Cys Phe Arg		
260	265	270
Asp Glu Arg Asn Ser Thr Tyr Asn Pro Gly Ile Ala Glu Gln Glu Gly		
275	280	285
Ala Glu Leu Phe Tyr Val Pro Gly Leu Cys Pro Ile Asp Leu Leu His		
290	295	300
Tyr Ala Met Gln His Asp Leu Leu Ser Glu Val Thr Phe Pro Phe Glu		
305	310	315
Asp Gly Arg Arg Val Leu His Glu Asn Trp Asp Phe Ile Ala Arg Arg		
325	330	335
Tyr Leu Gly Lys Tyr Tyr Asn Glu Asp Phe Tyr Glu Glu Glu Arg Lys		



Phe Asn Met Arg Ile Asn Asn Pro Ala Leu Thr Ala Gln Val Leu Val  
 260 265 270  
 Cys Val Ala Arg Ala Ser Met Lys Gln Gln Pro Gly Cys Tyr Thr Met  
 275 280 285  
 Val Glu Val Val Pro Val Ile Asp Leu Leu Pro Gly Asp Arg Glu Glu Trp  
 290 295 300  
 Ile Gly His Leu Val  
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<210> 7785  
 <211> 205  
 <212> PRT  
 <213> B.fragilis

<400> 7785  
 Ile Met Asn Pro Thr Glu Arg Ile Thr Thr Pro His Lys Thr Gly Glu  
 1 5 10 15  
 Ala Lys Val Ile Ile Phe Ser Ala Pro Ser Gly Ser Gly Lys Ser Thr  
 20 25 30  
 Ile Ile Asn Tyr Leu Leu Ala Gln Lys Leu Asn Leu Ala Phe Ser Ile  
 35 40 45  
 Ser Ala Thr Ser Arg Pro Pro Arg Gly Asn Glu Lys His Gly Val Glu  
 50 55 60  
 Tyr Phe Phe Leu Ser Pro Asp Glu Phe Arg Gln Arg Ile Ala Asn Asn  
 65 70 75 80  
 Glu Phe Leu Glu Tyr Glu Glu Val Tyr Thr Asp Arg Phe Tyr Gly Thr  
 85 90 95  
 Leu Lys Ala Gln Val Glu Lys Gln Leu Ala Thr Gly Gln Asn Val Val  
 100 105 110  
 Phe Asp Val Asp Val Val Gly Gly Cys Asn Ile Lys Lys Tyr Tyr Gly  
 115 120 125  
 Glu Arg Ala Leu Ser Leu Phe Ile Gln Pro Pro Cys Ile Asp Glu Leu  
 130 135 140  
 Arg Arg Arg Leu Ile Gly Arg Gly Thr Asp Thr Pro Glu Val Ile Glu  
 145 150 155 160  
 Ser Arg Ile Ala Lys Ala Glu Tyr Glu Leu Ser Phe Ala Pro Lys Phe  
 165 170 175  
 Asp Lys Val Ile Ile Asn Asp Asp Leu Glu Thr Ala Lys Ala His Ala  
 180 185 190  
 Leu Lys Val Ile Lys Glu Phe Leu Gly Ile Asp Thr Glu  
 195 200 205

<210> 7786  
 <211> 152  
 <212> PRT  
 <213> B.fragilis

<400> 7786  
 Leu Pro Gly Pro Ile Ala Thr Leu Val Thr Ala Pro Ala Ala Gly Tyr  
 1 5 10 15  
 Leu Val Glu Arg Ile His Pro Gly Ile Leu Gly Ser Ile Gly Met Ala  
 20 25 30  
 Leu Phe Cys Ile Gly Leu Tyr Ser Leu Ser Thr Leu Thr Ala Asp Ser  
 35 40 45  
 Ser Val Thr Gly Ile Ile Leu Arg Leu Met Leu Cys Gly Ala Gly Phe  
 50 55 60  
 Gly Leu Phe Gln Thr Pro Asn Asn Ser Thr Ile Ile Ser Ser Ala Pro  
 65 70 75 80  
 Thr Arg Arg Ser Gly Gly Ala Ser Gly Met Leu Gly Met Ala Arg Leu

85	90	95
Leu Gly Gln Thr Phe Gly Thr Thr	Leu Val Ala Leu Leu Phe Ser Phe	
100	105	110
Val Val His Glu Lys Ser Thr Ala Val Cys Leu Ile Ala Gly Ser Gly		
115	120	125
Phe Ala Phe Val Ala Ala Val Val Ser Ser Met Arg Leu Ser Gln Pro		
130	135	140
Ser Thr Leu Lys Thr Lys Pro Arg		
145	150	

&lt;210&gt; 7787

&lt;211&gt; 819

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7787

Val Arg Arg Pro Ala Glu Lys Val Asn Ile Leu Lys Lys Asn Leu Lys	
1 5 10 15	
Leu Ser Gly Val Lys Val Met Asn Tyr Ala Glu Ile Cys Ile Ile Lys	
20 25 30	
Arg Asp Gly Lys Arg Glu Asp Phe Ser Ile Ser Lys Ile Lys Asn Ala	
35 40 45	
Val Ser Lys Ala Phe Ser Ala Thr Gly Ile Asn Asp Glu Gln Gln Leu	
50 55 60	
Ile Ala Asp Ile Thr Met Asn Val Ile Gly Gln Phe Ala Ser Pro Thr	
65 70 75 80	
Ile Thr Val Glu Glu Ile Gln Asp Leu Val Glu Lys Glu Leu Met Lys	
85 90 95	
Val Arg Pro Glu Val Ala Lys Lys Tyr Ile Ile Tyr Arg Glu Trp Arg	
100 105 110	
Asn Thr Glu Arg Asp Lys Lys Thr Gln Met Lys His Val Met Asp Gly	
115 120 125	
Ile Val Ala Ile Asp Lys Asn Asp Val Asn Leu Ser Asn Ala Asn Met	
130 135 140	
Ser Ser His Thr Pro Ala Gly Gln Met Met Thr Phe Ala Ser Glu Val	
145 150 155 160	
Thr Lys Asp Tyr Thr Tyr Lys Tyr Leu Leu Pro Lys Arg Phe Ala Glu	
165 170 175	
Ala His Gln Leu Gly Asp Ile His Ile His Asp Leu Asp Tyr Tyr Pro	
180 185 190	
Thr Lys Thr Thr Thr Cys Ile Gln Tyr Asp Met Asp Asp Leu Phe Glu	
195 200 205	
Arg Gly Phe Arg Thr Lys Asn Gly Ser Ile Arg Thr Pro Gln Ser Ile	
210 215 220	
Gln Ser Tyr Ala Thr Leu Ala Thr Ile Ile Phe Gln Thr Asn Gln Asn	
225 230 235 240	
Glu Gln His Gly Gly Gln Ala Ile Pro Ala Phe Asp Phe Phe Met Ala	
245 250 255	
Lys Gly Val Ser Lys Ser Phe Arg Lys His Leu Ala Ser Phe Ile Ser	
260 265 270	
Phe Tyr Val Gln Met Asn Lys Gly Glu Glu Ile Glu Glu Lys Ala Ile	
275 280 285	
Arg Thr Val Ile Ala Glu His Leu Ser Ser Ile Lys Ala Ser Glu Leu	
290 295 300	
Glu Arg Glu Thr Leu Arg Met Ala Leu Thr Ala Leu Gln Ile Asn Ile	
305 310 315 320	
Asp Lys Glu His Leu Asn Gln Ile Ile Glu Lys Ala Phe Val Gln Thr	
325 330 335	
Gln Lys Asp Thr His Gln Ala Met Glu Gly Phe Ile His Asn Leu Asn	

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			340					345					350			
Thr	Met	His	Ser	Arg	Gly	Gly	Asn	Gln	Val	Val	Phe	Ser	Ser	Ile	Asn	
		355					360					365				
Tyr	Gly	Thr	Asp	Thr	Ser	Ala	Glu	Gly	Arg	Met	Val	Ile	Glu	Glu	Leu	
	370					375					380					
Leu	Lys	Ala	Thr	Val	Glu	Gly	Leu	Gly	Thr	Arg	Gly	Glu	Val	Pro	Val	
385					390					395					400	
Phe	Pro	Ile	Gln	Ile	Phe	Lys	Ile	Lys	Asn	Gly	Val	Ser	Tyr	Thr	Glu	
			405						410					415		
Ala	Asp	Tyr	Glu	Lys	Ala	Met	Ala	Asn	Phe	Asp	Ala	Ala	Met	Glu	Gly	
		420						425					430			
Lys	Leu	Lys	Phe	Glu	Ala	Pro	Asn	Phe	Asp	Leu	Phe	Leu	Lys	Ala	Cys	
		435					440					445				
His	Thr	Thr	Ala	Lys	Ala	Leu	Phe	Pro	Asn	Tyr	Met	Phe	Leu	Asp	Ala	
	450					455					460					
Pro	Phe	Lys	Gln	His	Glu	Gln	Trp	Asp	Ala	Asn	Asp	Pro	Gln	Arg	Tyr	
465					470					475					480	
Arg	Tyr	Glu	Leu	Ala	Thr	Met	Gly	Cys	Arg	Thr	Arg	Val	Ser	Glu	Asn	
			485					490						495		
Val	Ala	Gly	Glu	Lys	Ser	Ser	Leu	Gly	Arg	Gly	Asn	Leu	Ser	Phe	Thr	
		500						505					510			
Thr	Leu	Asn	Met	Pro	Arg	Leu	Ala	Ile	Glu	Ala	Arg	Ile	Lys	Ala	Glu	
		515					520					525				
Asn	Met	Thr	Glu	Asp	Gly	His	Asn	Lys	Asp	Ala	Val	Glu	Arg	Lys	Ala	
	530					535					540					
Lys	Glu	Ile	Phe	Ile	Glu	Ser	Ile	His	Glu	Thr	Ala	Thr	Leu	Ile	Ala	
545					550					555					560	
Glu	Gln	Leu	Tyr	Glu	Arg	Tyr	Gln	Tyr	Gln	Arg	Thr	Ala	Leu	Ala	Arg	
			565						570					575		
Gln	Phe	Pro	Phe	Met	Met	Gly	Asn	Asp	Val	Trp	Lys	Gly	Gly	Ala	Ala	
			580					585					590			
Leu	Asn	Pro	Asn	Glu	Gln	Val	Gly	Asp	Val	Leu	Arg	Ser	Gly	Thr	Leu	
		595					600					605				
Gly	Ile	Gly	Phe	Leu	Gly	Gly	His	Asn	Ala	Met	Val	Ala	Leu	Tyr	Gly	
	610					615					620					
Glu	Gly	His	Gly	His	Ser	Gln	Lys	Ala	Trp	Asp	Thr	Leu	Tyr	Glu	Ala	
625					630					635					640	
Val	Leu	Glu	Ile	Asn	Lys	Val	Ala	Asp	Glu	Tyr	Lys	Ala	Lys	Tyr	Asn	
			645						650					655		
Leu	Asn	Tyr	Ser	Val	Leu	Ala	Thr	Pro	Ala	Glu	Gly	Leu	Ser	Gly	Arg	
		660					665					670				
Phe	Thr	Arg	Met	Asp	Arg	Arg	Lys	Tyr	Gly	Lys	Ile	Lys	Gly	Val	Thr	
		675					680					685				
Asp	Asn	Asp	Tyr	Tyr	Val	Asn	Ser	Phe	His	Val	Asp	Val	Lys	Glu	Pro	
	690					695					700					
Ile	Ser	Ile	Val	Glu	Lys	Ile	Lys	Arg	Glu	Ala	Pro	Phe	His	Ala	Ile	
705					710					715					720	
Thr	Arg	Gly	Gly	His	Ile	Thr	Tyr	Val	Glu	Leu	Asp	Gly	Glu	Ala	Gln	
			725						730					735		
Lys	Asn	Val	Arg	Ala	Ile	Ala	Lys	Ile	Val	Lys	Val	Met	Phe	Asp	Glu	
		740					745					750				
Gly	Ile	Gly	Tyr	Gly	Ser	Ile	Asn	His	Pro	Val	Asp	Thr	Cys	His	Asn	
		755					760					765				
Cys	Gly	Tyr	Lys	Gly	Val	Ile	Tyr	Asp	Lys	Cys	Pro	Val	Cys	Gln	Ser	
	770					775					780					
Glu	Asn	Ile	Leu	Arg	Met	Arg	Arg	Ile	Thr	Gly	Tyr	Leu	Thr	Gly	Asp	
785					790					795					800	
Leu	Ser	Ser	Trp	Asn	Ser	Ala	Lys	Arg	Ala	Glu	Glu	Lys	Asp	Arg	Val	
			805						810					815		

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

Lys His Gly

<210> 7788  
 <211> 481  
 <212> PRT  
 <213> B.fragilis

&lt;400&gt; 7788

Tyr	Phe	Thr	Phe	Leu	Ile	Val	Tyr	Met	Ser	Glu	Ile	Ser	Val	Thr	Lys
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Lys	Asp	Ile	Ile	Trp	Gly	Tyr	Leu	Ala	Gln	Phe	Phe	Leu	Val	Ala	Ser
			20					25					30		
Gly	Leu	Ile	Thr	Leu	Pro	Leu	Val	Leu	Asn	Ile	Leu	Ser	Ala	Glu	Glu
		35					40					45			
Ile	Gly	Met	Asn	Tyr	Leu	Met	Leu	Thr	Ile	Gly	Ser	Leu	Val	Ser	Leu
	50					55					60				
Leu	Asp	Phe	Gly	Phe	Ala	Pro	Gln	Phe	Gly	Arg	Asn	Ile	Thr	Tyr	Ile
65					70					75					80
Phe	Ser	Gly	Ala	Gln	Lys	Leu	Gln	Lys	Glu	Gly	Ile	Ser	Thr	Glu	Lys
			85						90					95	
Gly	Asp	Leu	Asn	Tyr	Lys	Leu	Leu	Ala	Thr	Met	Ile	Ser	Ala	Ala	Lys
			100					105						110	
Leu	Ile	Tyr	Lys	Val	Met	Ala	Val	Val	Leu	Val	Ile	Met	Leu	Thr	
		115					120					125			
Leu	Gly	Thr	Val	Tyr	Ile	Tyr	Lys	Ala	Thr	Met	Gly	Phe	Thr	Ser	Val
		130					135					140			
Lys	Tyr	Ala	Leu	Leu	Ile	Trp	Val	Ile	Tyr	Ser	Ile	Ser	Ala	Phe	Phe
145					150					155					160
Ala	Ile	Tyr	Tyr	Thr	Tyr	Tyr	Thr	Ser	Leu	Leu	Met	Gly	Lys	Gly	Leu
				165					170					175	
Ile	Met	Glu	Ser	Lys	Lys	Ala	Met	Leu	Ala	Ser	Arg	Ile	Thr	Cys	Ile
			180					185						190	
Leu	Leu	Thr	Phe	Ile	Phe	Leu	Phe	Met	Gly	Trp	Gly	Leu	Leu	Gly	Ile
		195					200					205			
Ala	Val	Ala	Asn	Leu	Leu	Ala	Pro	Phe	Val	Asn	Arg	Tyr	Phe	Ser	Tyr
	210					215					220				
Arg	Tyr	Phe	Phe	Val	Pro	Glu	Leu	Arg	Asn	Lys	Ile	Glu	Asn	Tyr	Tyr
225					230					235					240
Val	Asn	Arg	Lys	Glu	Lys	Trp	Glu	Ile	Phe	Ser	Ile	Ile	Trp	Tyr	Asn
			245						250					255	
Ala	Lys	Lys	Leu	Gly	Met	Val	Phe	Ile	Gly	Asn	Tyr	Ala	Ile	Ser	Lys
			260					265						270	
Leu	Ser	Leu	Phe	Leu	Ala	Gly	Leu	Tyr	Leu	Ser	Leu	Gln	Glu	Ile	Ala
		275					280					285			
Ser	Tyr	Gly	Leu	Met	Ile	Gln	Leu	Val	Thr	Val	Leu	Thr	Val	Ser	Ser
		290				295					300				
Val	Thr	Leu	Phe	Thr	Ile	Ser	Glu	Pro	Tyr	Leu	Ile	Ser	Leu	Arg	Ile
305					310					315					320
Glu	Gly	Lys	Arg	Ser	Glu	Leu	Leu	Lys	Arg	Phe	Ser	Phe	Thr	Met	Asn
			325						330					335	
Val	Tyr	Tyr	Cys	Leu	Phe	Ile	Ile	Gly	Ser	Leu	Phe	Leu	Ile	Ile	Leu
			340					345					350		
Ala	Pro	Leu	Leu	Glu	Phe	Ile	Gly	Ser	Asn	Thr	Lys	Leu	Pro	Ser	
		355				360					365				
Thr	Tyr	Ile	Leu	Thr	Leu	Tyr	Cys	Phe	Val	Ile	Phe	Leu	Glu	Asn	Asn
	370					375					380				
Asn	Cys	Asn	Phe	Ser	Thr	Phe	Ile	Leu	Leu	Asp	Asn	Lys	Ile	Pro	Phe
385					390					395					400

Met Trp Pro Ser Leu Cys Thr Gly Val Phe Ile Ile Met Gly Asp Phe  
 405 410 415  
 Leu Ile Leu Gln Tyr Thr Ser Phe Ala Leu Gly Gly Leu Ile Met Val  
 420 425 430  
 Gln Leu Ile Cys Gln Ser Ala Tyr Val Asn Trp Arg Trp Ile Tyr Val  
 435 440 445  
 Val Cys Arg Asp Phe Lys Ile Ser Phe Ser Ser Phe Leu Ala Leu Gly  
 450 455 460  
 Leu Lys Glu Thr Phe Asn Lys Ile Arg Leu Ser Leu Phe Met Leu Lys  
 465 470 475 480  
 Tyr

<210> 7789

<211> 94

<212> PRT

<213> B.fragilis

<400> 7789

Trp Gly Ile Thr Gly Thr Thr Ser Met Ile Met Leu Met Lys Arg Arg  
 1 5 10 15  
 Lys Glu Thr Met Tyr Arg Leu Phe Leu Ile Leu Asn Leu Asp Tyr Cys  
 20 25 30  
 Glu Ala Lys Ile Val Tyr His Trp Ile Lys Asn Lys Gln Cys Tyr Leu  
 35 40 45  
 Lys Asn Lys Lys Thr Asp Ala Ser Tyr Phe Leu Pro Arg Ser Ile Thr  
 50 55 60  
 Glu Pro Phe Phe Val Asn Asp Gln Arg Leu Lys Ile Asp Ser Met Leu  
 65 70 75 80  
 Leu Cys Val Leu Cys Gly Glu Phe Arg His Thr Cys Leu Lys  
 85 90

<210> 7790

<211> 334

<212> PRT

<213> B.fragilis

<400> 7790

Tyr Val Asn Ala Met Thr Thr Pro Thr Val Ser Phe Ile Ile Pro Val  
 1 5 10 15  
 Tyr Asn Val Asp Lys Tyr Leu Ser Gln Cys Ile Glu Ser Ile Leu Val  
 20 25 30  
 Gln Ser Tyr Arg Asn Phe Glu Ile Ile Leu Val Asn Asp Gly Ser Ile  
 35 40 45  
 Asp Asn Ser Pro Tyr Leu Cys Asp Ile Tyr Gln Ser Lys Asp Glu Arg  
 50 55 60  
 Val Lys Thr Val His Lys Lys Asn Gly Gly Leu Ser Asp Ala Arg Asn  
 65 70 75 80  
 Val Gly Leu Thr Leu Ala Lys Gly Glu Tyr Ile Ile Phe Leu Asp Ser  
 85 90 95  
 Asp Asp Phe Trp Ile Ser Gln Asn Asp Leu Gln Leu Leu Val His Arg  
 100 105 110  
 Leu Asp Ser Leu Ile Asn Cys Asp Phe Met Cys Phe Asn Cys Cys Tyr  
 115 120 125  
 Tyr Tyr Pro Ser Lys His Leu Phe Lys Arg Trp Thr Pro Phe Ala Asp  
 130 135 140  
 Glu Leu Leu Leu Ser Val Asp Lys Ser Lys Ser Ile Ile Ser Leu Val  
 145 150 155 160  
 Ser Ser Gly Thr Phe Pro Met Ser Ala Cys Leu Lys Ile Ile Arg Arg

[illegible]

<400> 7791

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<210> 7792
<211> 118
<212> PRT
<213> B.fragilis
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<400> 7792

Tyr	Asn	Leu	Tyr	Tyr	Leu	Cys	Val	Met	Lys	Lys	Ile	Ile	Thr	Tyr	Lys
1				5					10					15	
Asn	Tyr	Phe	Ala	Glu	Phe	Met	Asp	Lys	Leu	Ser	Glu	Leu	Glu	Arg	Lys
			20					25					30		
Lys	Ile	Gln	Arg	Ala	Leu	Ser	Leu	Phe	Lys	Ala	Glu	Asp	Lys	Ile	Pro
		35					40					45			
Ser	His	Tyr	Ile	Lys	Phe	Ile	Arg	Asp	Gly	Val	Tyr	Glu	Phe	Arg	Val
	50					55					60				
Ala	Cys	Gly	Asn	Asn	Glu	Leu	Arg	Ile	Phe	Phe	Ile	Tyr	Asp	Gly	Glu
65					70					75					80
Asn	Val	Val	Val	Leu	Phe	Asn	Cys	Phe	Arg	Lys	Lys	Thr	Gln	Lys	Thr
				85					90					95	

Pro Asp Asn Glu Ile Lys Lys Ala Ile Asn Leu Lys Lys Glu Tyr Tyr  
 100 105 110  
 Glu Ala Lys Gly Asn Lys  
 115

<210> 7793  
 <211> 239  
 <212> PRT  
 <213> B.fragilis

<400> 7793  
 Ser Met Ile Leu Ser Ser Leu Val His Thr Asp Phe Gln Pro Tyr Leu  
 1 5 10 15  
 Leu Pro Asn Thr Asp Ala Trp Ala Leu Pro Arg Asp Lys Ala Leu Glu  
 20 25 30  
 Leu Leu Val Tyr Leu Lys Gln Gln Gly Val Arg Gln Ile Tyr Cys Val  
 35 40 45  
 Pro Pro Val Lys Val Glu Asn Glu Gly Asn Ala Phe Ser Phe Leu Lys  
 50 55 60  
 Asp Ala Phe Gln Tyr Leu Gln Gln Gln Tyr Ser Gly Asn Ile Ser Leu  
 65 70 75 80  
 Arg Leu Ser Ala Arg Tyr Arg Leu Asp Glu Gly Phe Pro Ala Leu Leu  
 85 90 95  
 Glu Lys Gly Asp Leu Leu Thr Ile Gly Gly Gly Lys Glu Leu Leu Val  
 100 105 110  
 Asp Val Ser Pro Leu Gln Gln Pro Glu Gly Leu Ser Glu Met Ile His  
 115 120 125  
 Ala Ile Cys Arg Ser Gly Tyr Ile Pro Val Leu Met Gln Pro Glu Arg  
 130 135 140  
 Ser Leu Tyr Trp Gly Thr Glu Asp Tyr Leu His Leu Arg Glu Ser Gly  
 145 150 155 160  
 Cys Arg Leu Met Leu Asn Leu Tyr Ser Leu Phe Gly Tyr Asn Gly Asp  
 165 170 175  
 Gly Ala Leu Asn Tyr Ser Arg Met Leu Leu Arg Lys Glu Trp Tyr Thr  
 180 185 190  
 Tyr Leu Cys Ser Gly Arg Glu Asp Thr Lys Val Met Arg Tyr Gly Glu  
 195 200 205  
 Ser Phe Ser Ile Glu Asp Asp Asp Leu Ala Met Lys Leu Gln Glu  
 210 215 220  
 Ile Glu Arg Asn Ser Arg Leu Leu Trp Ser Ala Thr Glu Asn Gly  
 225 230 235

<210> 7794  
 <211> 167  
 <212> PRT  
 <213> B.fragilis

<400> 7794  
 Asn Lys Gln Tyr Thr Arg Ile Tyr Arg Asn Ile His Ile Arg Thr Thr  
 1 5 10 15  
 Asn Phe Ala Phe Val Ile Lys Lys Leu Ile Arg Arg Asn Glu Gln Lys  
 20 25 30  
 Lys Pro Asn Glu Gly Val Val Leu Asn Met Gly Asn Thr Pro Tyr Val  
 35 40 45  
 Val Ile Val Asn Glu Lys Ser Asp Glu Gly Gln Lys Val Leu Glu Ala  
 50 55 60  
 Leu Glu Glu Asn Ile Glu Lys Met Asp Ile Gly Ser His Arg Glu Leu  
 65 70 75 80  
 Val Ile Phe Phe Phe Val Trp Leu Asn His Gln Gln Lys Asp Pro Lys

				85					90					95			
Lys	Arg	Lys	Asn	Ile	Arg	Glu	Leu	Ala	Lys	Ile	Met	His	Arg	Ser	Leu		
			100					105						110			
Phe	Phe	Gly	Gln	Lys	His	Asn	Ser	Asn	Glu	Glu	Met	Lys	Pro	Asp	Ser		
		115					120						125				
Ile	Glu	Thr	Glu	Ile	Phe	Lys	Ile	Leu	Arg	Ile	Leu	Lys	Ser	Met	Lys		
	130					135					140						
Lys	Ala	Glu	Asp	Lys	Asp	Leu	Ile	Ile	Asn	Leu	Leu	Asp	Asp	Ile	Ser		
145					150					155					160		
Leu	Phe	Leu	Asp	Glu	Asn	Val											
				165													

&lt;210&gt; 7795

&lt;211&gt; 185

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7795

Asp	Trp	Leu	His	Leu	His	Gln	Phe	Met	Asn	Phe	Thr	Ala	Met	Asp	Ile		
1				5					10					15			
Thr	Leu	Arg	Thr	Leu	Thr	Glu	Asn	Asp	Leu	Pro	Phe	Val	Lys	Asp	Ile		
			20					25					30				
Tyr	Asp	Tyr	Tyr	Thr	Leu	His	Thr	Thr	Val	Val	Tyr	Phe	Val	His	Cys		
		35					40					45					
Ala	Ser	Ile	Asp	Glu	Leu	Lys	Asn	Tyr	Ile	Pro	Val	Gly	Asp	Pro	Val		
	50					55					60						
Tyr	Arg	Ser	Phe	Ile	Ile	Glu	Thr	Pro	Glu	Gly	Ala	Pro	Cys	Gly	Phe		
65					70					75					80		
Cys	Tyr	Phe	Ala	Arg	Phe	Lys	Pro	Arg	Glu	Ala	Phe	Arg	Ile	Ser	Val		
				85					90					95			
Glu	Leu	Thr	Leu	Tyr	Leu	Lys	Pro	Glu	Phe	Thr	Gly	Arg	Gly	Tyr	Gly		
			100					105					110				
Lys	Gln	Ala	Ile	Leu	Arg	Leu	Glu	Glu	Ile	Ile	Arg	Gln	Glu	Gly	Phe		
		115					120					125					
Ser	Asn	Ile	Met	Ala	Leu	Ile	Ser	Gly	Glu	Asn	Glu	Ala	Ser	Ile	Arg		
		130				135					140						
Leu	Phe	Glu	Lys	Cys	Gly	Phe	Glu	Cys	Cys	Ala	Asn	Ile	Arg	Gln	Val		
145					150					155					160		
Ala	Glu	Lys	Phe	Gly	Lys	Lys	Leu	Asp	Leu	Arg	Met	Tyr	Gln	Lys	Ile		
				165					170					175			
Ile	Ser	Asp	Asn	Ser	His	Leu	Thr	Pro									
			180					185									

&lt;210&gt; 7796

&lt;211&gt; 60

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7796

His	Ser	Val	Lys	Thr	Cys	Ser	Leu	Asp	Val	Asn	Lys	Lys	Phe	Phe	Lys		
1				5					10					15			
Cys	Lys	Arg	Leu	Val	Ile	Cys	Ala	Gln	Glu	Pro	Asp	Asn	Leu	Gln	Lys		
			20					25					30				
Ala	Leu	Thr	Met	Leu	Ile	Glu	Glu	Arg	Tyr	Lys	Asp	Glu	Asp	Thr	Gly		
		35					40					45					
Ser	Asn	Gly	Val	Asn	Ser	Leu	Pro	Lys	Leu	Glu	Leu						
50						55					60						

&lt;210&gt; 7797

<211> 370  
 <212> PRT  
 <213> B.fragilis

<400> 7797

Leu Lys Thr Lys Ser Leu Ile Asp Met Lys Pro Tyr Leu Leu Leu Thr  
 1 5 10 15  
 Pro Gly Pro Leu Thr Thr Ser Glu Thr Val Lys Glu Thr Met Met Thr  
 20 25 30  
 Asp Trp Cys Thr Trp Asp Glu Asp Tyr Asn Leu His Ile Val Glu Ala  
 35 40 45  
 Leu Arg Lys Glu Leu Val Gly Ile Ala Thr Arg Asn Thr Glu Glu Tyr  
 50 55 60  
 Thr Ser Val Leu Leu Gln Gly Ser Gly Thr Tyr Cys Val Glu Ala Val  
 65 70 75 80  
 Ile Gly Ala Ala Ile Gly Lys Asn Asp Lys Leu Leu Ile Cys Ser Asn  
 85 90 95  
 Gly Ala Tyr Gly Asp Arg Met Gly Asn Ile Ala Glu Tyr Tyr His Ile  
 100 105 110  
 Asp Tyr Glu Leu Leu Ala Phe Asp Glu Thr Glu Gln Val Ser Val Asp  
 115 120 125  
 Tyr Val Asp Asp Tyr Leu Ser Asn Asn Ser Asp Val Thr His Val Ala  
 130 135 140  
 Phe Val His Cys Glu Thr Thr Gly Ile Leu Asn Pro Leu Lys Glu  
 145 150 155 160  
 Leu Ala His Val Val Lys Met His Gly Lys Lys Leu Ile Val Asp Ala  
 165 170 175  
 Met Ser Ser Phe Gly Gly Ile Pro Met Asp Val Ser Glu Leu Gly Ile  
 180 185 190  
 Asp Phe Leu Ile Ser Ser Ala Asn Lys Cys Ile Gln Gly Val Pro Gly  
 195 200 205  
 Phe Gly Phe Ile Ile Ala Arg Arg Ser Glu Leu Val Arg Cys Lys Gly  
 210 215 220  
 Val Ala Arg Ser Leu Ser Leu Asp Ile Tyr Asp Gln Trp Glu Thr Met  
 225 230 235 240  
 Glu Lys Gly His Gly Lys Trp Arg Phe Thr Ser Pro Thr His Val Val  
 245 250 255  
 Arg Ala Phe Lys Gln Ala Leu Thr Glu Leu Ile Glu Glu Gly Gly Val  
 260 265 270  
 Glu Ala Arg His Arg Arg Tyr Cys Glu Asn His Arg Val Leu Val Glu  
 275 280 285  
 Gly Met Arg Ser Leu Gly Phe Val Thr Leu Leu Asp Asp Ala Ile Gln  
 290 295 300  
 Ser Pro Ile Ile Thr Ser Phe Leu Tyr Pro Lys Thr Gly Phe Asp Phe  
 305 310 315 320  
 Lys Ala Phe Tyr Thr Ala Leu Lys Ser Lys Gly Phe Val Ile Tyr Pro  
 325 330 335  
 Gly Lys Ile Ser Lys Ala Asp Thr Phe Arg Ile Gly Asn Ile Gly Asp  
 340 345 350  
 Val His Pro Glu Asp Phe Ala Arg Leu Val Glu Val Val Arg Glu Thr  
 355 360 365  
 Glu Tyr  
 370

<210> 7798  
 <211> 69  
 <212> PRT  
 <213> B.fragilis

&lt;400&gt; 7798

Val Phe Ala Lys Ser Ser Asn His Ser Pro Pro Lys Pro Gly Ser Ser  
 1 5 10 15  
 Thr Arg Tyr His Gln Glu Ile Asn Asp Tyr Leu Leu Met Ile Ser Glu  
 20 25 30  
 Val Thr Pro Ile Leu Phe Gln Arg Ser Ala Lys Leu Leu Ile Tyr Thr  
 35 40 45  
 Lys Ser Ala Leu Asp Lys Lys Lys Ala Arg Thr Glu Met Leu Tyr Leu  
 50 55 60  
 Cys Phe Phe Val Asn  
 65

&lt;210&gt; 7799

&lt;211&gt; 388

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7799

Gln Ile Asn Lys Ser Ile Ile Lys Asn Met Lys Thr Tyr Leu Val Thr  
 1 5 10 15  
 Gly Ala Ala Gly Phe Ile Gly Ala Asn Tyr Leu Lys Tyr Ile Leu Ala  
 20 25 30  
 Lys His Ser Asp Ile Lys Val Val Val Leu Asp Ala Leu Thr Tyr Ala  
 35 40 45  
 Gly Asn Leu Gly Thr Ile Ala Asn Asp Ile Asp Asn Glu Arg Cys Phe  
 50 55 60  
 Phe Val Lys Gly Asp Ile Cys Asp Arg Glu Leu Ala Asp Arg Leu Phe  
 65 70 75 80  
 Gly Glu Tyr Lys Phe Asp Tyr Val Val Asn Phe Ala Ala Glu Ser His  
 85 90 95  
 Val Asp Arg Ser Ile Glu Asn Pro Gln Leu Phe Leu Met Thr Asn Ile  
 100 105 110  
 Leu Gly Thr Gln Asn Leu Leu Asp Ala Ala Arg Arg Ala Trp Val Thr  
 115 120 125  
 Gly Lys Asp Glu Tyr Gly Tyr Pro Thr Trp Arg Lys Gly Val Arg Tyr  
 130 135 140  
 His Gln Val Ser Thr Asp Glu Val Tyr Ser Ser Leu Gly Ala Glu Ser  
 145 150 155 160  
 Tyr Phe His Glu Thr Thr Pro Leu Cys Pro His Ser Pro Tyr Ser Ala  
 165 170 175  
 Ser Lys Asn His Ala Asp Met Val Val Met Ala Tyr His Asp Thr Tyr  
 180 185 190  
 Lys Met Pro Val Thr Ile Thr Arg Cys Ser Asn Asn Tyr Gly Pro Tyr  
 195 200 205  
 His Phe Pro Glu Lys Leu Ile Pro Leu Ile Ile Lys Asn Ile Leu Glu  
 210 215 220  
 Gly Lys Lys Leu Pro Val Tyr Gly Asp Gly Ser Asn Val Arg Asp Trp  
 225 230 235 240  
 Leu Tyr Val Glu Asp His Cys Lys Ala Ile Asp Leu Val Val Arg Glu  
 245 250 255  
 Gly Val Glu Gly Glu Val Tyr Asn Val Gly Gly His Asn Glu Lys Thr  
 260 265 270  
 Asn Leu Glu Ile Val Lys Leu Thr Ile Ala Thr Ile His Arg Leu Met  
 275 280 285  
 Ala Glu His Pro Glu Tyr Arg Glu Val Leu Lys Lys Lys Glu Lys Asn  
 290 295 300  
 Ala Asp Gly Glu Ile Ser Ile Asp Trp Ile Asn Glu Asp Leu Ile Thr  
 305 310 315 320  
 Phe Val Lys Asp Arg Leu Gly His Asp Gln Arg Tyr Ala Ile Asp Pro



325 330 335  
 Thr Lys Ile Thr Asn Ala Leu Gly Trp Tyr Pro Glu Thr Lys Phe Glu  
 340 345 350  
 Val Gly Ile Val Lys Thr Ile Glu Trp Tyr Leu Asn Asn Gln Glu Trp  
 355 360 365  
 Val Glu Glu Val Thr Ser Gly Asp Tyr Gln Lys Tyr Tyr Glu Arg Met  
 370 375 380  
 Tyr Ser Lys Arg  
 385

<210> 7800  
 <211> 456  
 <212> PRT  
 <213> B.fragilis

<400> 7800

Ile Val Asn Asn Leu Met Glu Thr Phe Leu Ile Arg Ala Leu Gln Leu  
 1 5 10 15  
 Ile Met Ser Leu Ser Leu Leu Val Ile Ile His Glu Gly Gly His Phe  
 20 25 30  
 Leu Phe Ala Arg Leu Phe Lys Val Arg Val Glu Lys Phe Cys Leu Phe  
 35 40 45  
 Phe Asp Pro Trp Phe Thr Leu Phe Lys Phe Lys Pro Lys Lys Ser Glu  
 50 55 60  
 Thr Glu Tyr Ala Val Gly Trp Leu Pro Leu Gly Gly Tyr Val Lys Ile  
 65 70 75 80  
 Ala Gly Met Ile Asp Glu Ser Met Asp Thr Glu Gln Met Lys Gln Pro  
 85 90 95  
 Glu Gln Pro Trp Glu Phe Arg Ser Lys Pro Ala Trp Gln Arg Leu Leu  
 100 105 110  
 Ile Met Val Gly Gly Val Leu Phe Asn Phe Leu Leu Ala Leu Phe Ile  
 115 120 125  
 Tyr Ser Met Ile Leu Phe Lys Trp Gly Asp Gln Tyr Ile Pro Val Gln  
 130 135 140  
 Lys Ala Pro Leu Gly Met Asp Phe Asn Glu Thr Ala Lys Ala Val Gly  
 145 150 155 160  
 Phe Gln Asp Gly Asp Ile Leu Leu Ser Ala Asp Gly Val Asp Phe Val  
 165 170 175  
 Arg Tyr Asp Pro Asp Met Leu Ser Gln Ile Ala Asp Ala Arg Glu Val  
 180 185 190  
 Thr Val Leu Arg Glu Gly Lys Lys Ala Ser Val Tyr Ile Pro Glu Asp  
 195 200 205  
 Met Met Gln Arg Leu Leu Gly Asp Ser Val Arg Phe Ala Glu Phe Arg  
 210 215 220  
 Phe Pro Tyr Val Val Asp Ser Val Met Val Asn Ser Pro Ala Ala Met  
 225 230 235 240  
 Ala Gly Ile Gln Pro Gly Asp Ser Ile Ile Ala Leu Asp Gly Lys Pro  
 245 250 255  
 Val Ser Tyr Thr Asp Phe Leu Ala Ala Met Ala Glu Arg Arg Gln Asn  
 260 265 270  
 Ala Lys Ala Leu Gln Asn Asp Ser Ile Asn Pro His Gln Ile Ser Leu  
 275 280 285  
 Thr Tyr Val Arg Asp Gly Lys Thr Asp Val Leu Thr Leu Thr Thr Asp  
 290 295 300  
 Ser Ala Phe Lys Ile Gly Val Ala Val Asn Pro Tyr Thr Asp Gln Leu  
 305 310 315 320  
 Leu Pro Val Ile Arg Lys Glu Tyr Gly Phe Phe Glu Ser Phe Pro Ala  
 325 330 335  
 Gly Val Ala Leu Gly Val Lys Thr Leu Lys Gly Tyr Val Gly Asn Met

			340					345					350				
Lys	Tyr	Leu	Phe	Ser	Lys	Glu	Gly	Ala	Lys	Gln	Leu	Gly	Gly	Phe	Gly		
		355					360					365					
Thr	Ile	Gly	Ser	Ile	Phe	Pro	Ala	Thr	Trp	Asn	Trp	His	Gln	Phe	Trp		
	370					375					380						
Tyr	Met	Thr	Ala	Phe	Leu	Ser	Ile	Ile	Leu	Ala	Phe	Met	Asn	Ile	Leu		
385					390					395					400		
Pro	Ile	Pro	Ala	Leu	Asp	Gly	Gly	His	Val	Leu	Phe	Leu	Phe	Tyr	Glu		
			405						410					415			
Ile	Ile	Ala	Arg	Lys	Pro	Ser	Asp	Lys	Phe	Met	Glu	Tyr	Ala	Gln			
		420					425					430					
Met	Ala	Gly	Met	Ile	Leu	Leu	Phe	Gly	Leu	Leu	Ile	Trp	Ala	Asn	Phe		
	435						440					445					
Asn	Asp	Ile	Leu	Arg	Phe	Phe	Phe										
	450					455											

&lt;210&gt; 7801

&lt;211&gt; 221

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7801

Gln	Thr	Asn	Lys	Gln	Lys	Gln	Leu	Lys	Asn	Asn	Ser	Asn	Met	Lys	Arg		
1			5					10					15				
Ile	Ile	Ile	Ala	Leu	Met	Val	Ala	Val	Thr	Phe	Cys	Ser	Leu	Ala	Met		
		20					25					30					
Ala	Gln	Asn	Pro	Thr	Ile	Thr	Gln	Asp	Asn	Lys	Asn	Ser	Ser	Asp	Ser		
	35					40					45						
Thr	Ile	Val	Thr	Glu	Tyr	Thr	Asp	Ile	Val	Asp	Ser	Ser	Thr	Val	Asp		
	50				55				60								
Thr	Asp	Tyr	Gln	Ser	Ser	Ser	Phe	Asp	Phe	Gly	Asn	Glu	Phe	Pro	Phe		
65				70				75						80			
Asn	Ile	Asp	Lys	Gly	Ala	Ile	Asn	Gly	Gly	Ile	Leu	Thr	Gly	Leu	Val		
			85					90					95				
Val	Ile	Ile	Leu	Ile	Phe	Gly	Phe	Pro	Phe	Phe	Ile	Val	Phe	Ile	Ala		
	100						105					110					
Phe	Tyr	Phe	Arg	Tyr	Lys	Asn	Arg	Lys	Ala	Lys	Tyr	Arg	Leu	Met	Glu		
	115					120					125						
Gln	Ala	Leu	Ala	Thr	Gly	Gln	Pro	Leu	Pro	Glu	Gly	Ile	Phe	Lys	Asp		
	130				135					140							
Thr	Leu	Pro	Gln	Asp	Tyr	Arg	Thr	Lys	Gly	Ile	Lys	Asn	Ile	Cys	Thr		
145				150					155					160			
Gly	Ile	Gly	Leu	Phe	Ile	Phe	Leu	Trp	Ala	Ile	Thr	Asp	Glu	Phe	Ser		
			165					170						175			
Ile	Gly	Cys	Ile	Gly	Leu	Leu	Val	Met	Phe	Thr	Gly	Ile	Gly	Gln	Trp		
		180						185					190				
Ile	Ile	Ser	Arg	Asn	Gln	Gln	His	Glu	Arg	Pro	Glu	Asp	Pro	Phe	Thr		
	195				200						205						
Arg	Pro	Thr	His	Lys	Asp	Glu	Thr	Leu	Asn	Glu	Gln	Lys					
	210					215					220						

&lt;210&gt; 7802

&lt;211&gt; 245

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7802

Ser	Glu	Asn	Asn	His	Val	Asn	Leu	Arg	Gln	Phe	Asn	Asn	Leu	Ile	Leu		
1				5				10					15				

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Met Ser Cys Ile Leu His Ile Glu Thr Ser Thr Ala Val Cys Ser Val
      20                      25                      30
Ala Val Ser Glu Asp Gly Gln Asn Ile Phe Val Lys Glu Asp Leu Lys
      35                      40                      45
Gly Pro Ser His Ala Val Ser Leu Gly Val Phe Val Asp Glu Ala Leu
      50                      55                      60
Ser Phe Ile Asp Ser His Ala Ile Pro Leu Asp Ala Val Ala Val Ser
      65                      70                      75                      80
Cys Gly Pro Gly Ser Tyr Thr Gly Leu Arg Ile Gly Val Ser Met Ala
      85                      90                      95
Lys Gly Ile Cys Tyr Gly Arg Asn Val Pro Leu Ile Gly Ile Pro Thr
      100                     105                     110
Leu Glu Val Leu Ser Val Pro Val Leu Leu Tyr His Glu Leu Pro Glu
      115                     120                     125
Asp Ala Leu Leu Cys Pro Met Ile Asp Ala Arg Arg Met Glu Val Tyr
      130                     135                     140
Ala Ala Ile Tyr Asp Arg Ala Leu Asn Val Lys Arg Glu Ile Ser Ala
      145                     150                     155                     160
Asp Ile Val Asp Glu Asn Ser Tyr Leu Glu Tyr Leu Glu Gln His Pro
      165                     170                     175
Val Tyr Phe Phe Gly Asn Gly Ala Ala Lys Cys Arg Glu Lys Ile Thr
      180                     185                     190
His Pro Asn Ala His Phe Ile Asp Asp Leu His Pro Leu Ala Lys Met
      195                     200                     205
Met Phe Pro Leu Ala Glu Lys Thr Val Ala Ile Asn Asp Tyr Lys Asp
      210                     215                     220
Val Ala Tyr Phe Glu Pro Phe Tyr Leu Lys Glu Phe Val Ala Ser Gln
      225                     230                     235                     240
Pro Lys Lys Leu Leu
      245

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<210> 7803
<211> 305
<212> PRT
<213> B.fragilis

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<400> 7803
Leu Leu Arg Asn His Ser Val Gln Pro Val Cys Ser Arg His Leu His
1                      5                      10                      15
Asp Glu Pro His Leu Leu Ser Gln Asn Arg Glu Pro Leu Gly Gly Leu
      20                      25                      30
Pro Ala His Asn Asp Gln Tyr Cys His Asn Leu Arg Trp Leu Leu Leu
      35                      40                      45
Leu Phe Ser Ser Phe Tyr Trp Phe Cys Leu Thr His Phe Phe Ile Ser
      50                      55                      60
Val Ala Lys Leu Val Ile Phe Phe Val Phe Arg Ser Leu Lys Gly Val
      65                      70                      75                      80
Lys Val Ser Phe Cys Tyr Ser Arg Phe Val Lys His Asn Ile Tyr Tyr
      85                      90                      95
Leu Cys Val Leu Ile Ile Thr Ile Met Ile Glu Tyr Ile Lys Gly Glu
      100                     105                     110
Ile Ala Glu Leu Ser Pro Ala Thr Ala Val Ile Asp Cys Asn Gly Leu
      115                     120                     125
Gly Tyr Ala Val Asn Ile Ser Leu Asn Thr Tyr Ser Ala Ile Gln Gly
      130                     135                     140
Lys Ser Ser Cys Lys Leu Tyr Ile Tyr Glu Ala Ile Arg Glu Asp Ala
      145                     150                     155                     160
Tyr Val Leu Tyr Gly Phe Ala Asp Lys Gln Glu Arg Glu Leu Phe Leu
      165                     170                     175

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CCN1\_HUMAN

Leu Leu Ile Ser Val Ser Gly Ile Gly Gly Asn Thr Ala Arg Met Ile  
 180 185 190  
 Leu Ser Ala Leu Ser Pro Ala Glu Leu Val Asn Val Ile Ser Thr Glu  
 195 200 205  
 Asn Ala Asn Met Leu Lys Thr Val Lys Gly Ile Gly Leu Lys Thr Ala  
 210 215 220  
 Gln Arg Val Ile Val Asp Leu Lys Asp Lys Ile Lys Thr Gly Ala Met  
 225 230 235 240  
 Ala Ala Thr Ala Val Gly Gly Ala Ala Gly Ala Leu Leu Pro Ala Met  
 245 250 255  
 Asn Ala Glu Val Gln Glu Glu Ala Ile Ala Ala Leu Thr Met Leu Gly  
 260 265 270  
 Phe Ala Ala Ala Pro Ser Gln Lys Ala Val Leu Ala Ile Leu Lys Glu  
 275 280 285  
 Glu Pro Asp Ala Pro Val Glu Lys Val Ile Lys Leu Ala Leu Lys Arg  
 290 295 300  
 Leu  
 305

&lt;210&gt; 7804

&lt;211&gt; 310

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7804

Ser Val Cys Lys Gly Thr Thr Phe Arg Ser Ser Leu Ser Thr Leu His  
 1 5 10 15  
 Ser Lys Phe Val Phe Leu Pro Ser Ile Thr Lys Asn Asn Lys Met Lys  
 20 25 30  
 Lys Leu Ile Val Leu Thr Cys Thr Leu Ser Leu Leu Thr Ala Cys Gly  
 35 40 45  
 Asp Ser Ile Glu Lys Lys Ala Gly Glu Lys Leu Ala Ala Ala Arg Ala  
 50 55 60  
 Ala Phe Glu His Asn Asp Tyr Asn Glu Ala Lys Leu Gln Ile Asp Ser  
 65 70 75 80  
 Ile Lys Ile Leu Tyr Pro Lys Ala Phe Asp Thr Arg Lys Glu Gly Ile  
 85 90 95  
 Lys Leu Met Gln Gln Val Glu Leu Lys Glu Gln Gln Glu Ser Leu Val  
 100 105 110  
 Tyr Leu Asp Ser Met Leu Gln Val Lys Gln Lys Glu Phe Glu Ala Ile  
 115 120 125  
 Lys Asn Lys Tyr Thr Phe Glu Lys Asn Glu Glu Tyr Gln Lys Ile Gly  
 130 135 140  
 Asn Tyr Phe Trp Pro Thr Gln Thr Val Glu Lys Asn Leu His Arg Ser  
 145 150 155 160  
 Phe Leu Arg Phe Gln Val Asn Glu Gln Gly Val Met Thr Leu Thr Ser  
 165 170 175  
 Ile Tyr Cys Gly Pro Ser Asn Ile His His Val Ala Val Lys Val Ile  
 180 185 190  
 Ala Pro Asp Gly Ser Phe Ala Glu Thr Pro Ala Ser Asn Asp Ser Tyr  
 195 200 205  
 Glu Thr Thr Asp Leu Gly Glu Lys Ile Glu Lys Ala Asp Tyr Lys Met  
 210 215 220  
 Gly Glu Asp Gly Asn Val Leu Ser Phe Leu Tyr Met Asn Arg Asp Lys  
 225 230 235 240  
 Lys Asn Ile Arg Val Glu Tyr Leu Gly Glu Arg Lys Phe Ser Thr Thr  
 245 250 255  
 Met Thr Pro Ser Asp Arg Glu Ala Leu Val Gly Thr Tyr Glu Leu Ala  
 260 265 270

Lys Leu Leu Ser Ser Ile Arg Gln Ile Gln Gln Glu Lys Glu Glu Ala  
 275 280 285  
 Asn Leu Lys Ile Glu Phe Val Lys Arg Lys Met Glu Gln Lys Ala Gln  
 290 295 300  
 Glu Glu Ala Ala Glu Lys  
 305 310

<210> 7805

<211> 202

<212> PRT

<213> B.fragilis

<400> 7805

His Met Ala Lys Thr Lys Thr Gly Ile Phe Ser Gly Ser Phe Asn Pro  
 1 5 10 15  
 Ile His Ile Gly His Leu Ala Leu Ala Asn Tyr Leu Cys Glu Phe Glu  
 20 25 30  
 Gly Leu Asp Glu Val Trp Phe Met Val Thr Pro His Asn Pro Phe Lys  
 35 40 45  
 Asn Gln Ala Asp Leu Trp Pro Asp Glu Leu Arg Leu Gln Leu Val Gln  
 50 55 60  
 Leu Ala Ile Glu Gly Tyr Pro Arg Phe Arg Val Ser Asp Phe Glu Phe  
 65 70 75 80  
 His Leu Pro Arg Pro Ser Tyr Thr Ile His Thr Leu Asn Arg Leu Lys  
 85 90 95  
 Gln Glu Tyr Pro Glu Arg Glu Phe Gln Leu Ile Ile Gly Ser Asp Asn  
 100 105 110  
 Trp Met Val Phe Asp Arg Trp Phe Glu Ser Glu Arg Ile Val Ser Glu  
 115 120 125  
 Asn Lys Ile Leu Val Tyr Pro Arg Pro Gly Phe Ser Val Asp Lys Ser  
 130 135 140  
 Gln Leu Pro Pro Asn Val His Val Ala Asp Ser Pro Ile Phe Glu Ile  
 145 150 155 160  
 Ser Ser Thr Phe Ile Arg Glu Ala Leu Ala Thr Gly Lys Asp Ile Arg  
 165 170 175  
 Tyr Phe Leu His Pro Ala Val Tyr Lys Arg Ile Ile Gln Gln Thr Asp  
 180 185 190  
 Ser Ile Asp Ser Ser His Ser Cys His Thr  
 195 200

<210> 7806

<211> 146

<212> PRT

<213> B.fragilis

<400> 7806

Met Val Lys Lys Ile Thr Ile Ser Lys Arg Asp Arg Glu Lys Leu Lys  
 1 5 10 15  
 Glu Gln Lys Arg Lys Glu Lys Gln Gln Arg Lys Glu Glu Arg Gln Ser  
 20 25 30  
 Asn Gly Pro Ser Ser Phe Glu Asp Met Ile Ala Tyr Val Asp Gln Phe  
 35 40 45  
 Gly Val Leu His Ser Val Pro Gln Glu Arg Leu Glu Glu Val Asp  
 50 55 60  
 Ala Ser His Ile Glu Val Ser Val Pro Lys Gln Glu Asp Val Glu Val  
 65 70 75 80  
 Ala Pro Leu Met Gly Arg Ile Glu Tyr Phe Asn Ala Ala Lys Gly Tyr  
 85 90 95  
 Gly Phe Val Lys Asp Ala Asp Cys Gly Glu Lys Tyr Phe Phe His Ile

	100		105		110										
Ser	Ser	Ala	Pro	Ala	Thr	Ile	Ala	Glu	Gly	Asp	Arg	Val	Thr	Phe	Glu
	115						120					125			
Ile	Glu	Arg	Gly	Met	Arg	Gly	Met	Asn	Ala	Val	Arg	Ile	Ser	Ile	Val
	130					135					140				
Thr	Glu														
145															

&lt;210&gt; 7807

&lt;211&gt; 438

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7807

Ser	Pro	Arg	Asn	Met	Ala	Ser	Phe	Val	Ile	Glu	Gly	Gly	His	Arg	Leu
1			5					10					15		
Ser	Gly	Glu	Ile	His	Pro	Gln	Gly	Ala	Lys	Asn	Glu	Val	Leu	Gln	Ile
		20					25					30			
Ile	Cys	Ala	Thr	Leu	Leu	Thr	Ala	Glu	Glu	Val	Thr	Val	Asn	Asn	Ile
	35					40					45				
Pro	Asp	Ile	Leu	Asp	Val	Asn	Asn	Leu	Ile	Gln	Leu	Met	Arg	Asp	Met
	50					55					60				
Gly	Val	Thr	Val	Ala	Lys	Thr	Gly	Val	Asp	Ser	Tyr	Ser	Phe	Lys	Ala
65				70					75					80	
Ala	Asn	Val	Asp	Leu	Ala	Tyr	Leu	Glu	Ser	Asp	Asn	Phe	Leu	Lys	Lys
			85					90					95		
Cys	Ser	Ser	Leu	Arg	Gly	Ser	Val	Met	Leu	Ile	Gly	Pro	Met	Val	Ala
			100				105					110			
Arg	Phe	Gly	Lys	Ala	Met	Ile	Ser	Lys	Pro	Gly	Gly	Asp	Lys	Ile	Gly
	115					120					125				
Arg	Arg	Arg	Leu	Asp	Thr	His	Phe	Ile	Gly	Ile	Gln	Asn	Leu	Gly	Ala
	130				135						140				
Asp	Phe	Thr	Tyr	Asn	Glu	Glu	Arg	Glu	Ile	Tyr	Glu	Ile	Ser	Ala	Glu
145				150					155					160	
Glu	Leu	Lys	Gly	Thr	Ser	Met	Leu	Leu	Asp	Glu	Ala	Ser	Val	Thr	Gly
			165					170					175		
Thr	Ala	Asn	Ile	Val	Met	Ala	Ala	Val	Leu	Ala	Lys	Gly	Lys	Thr	Thr
		180						185					190		
Ile	Tyr	Asn	Ala	Ala	Cys	Glu	Pro	Tyr	Leu	Gln	Gln	Leu	Cys	Lys	Met
	195						200					205			
Leu	Asn	Arg	Met	Gly	Ala	Lys	Ile	Ser	Gly	Ile	Ala	Ser	Asn	Leu	Leu
	210					215					220				
Thr	Ile	Glu	Gly	Val	Glu	Glu	Leu	His	Gly	Thr	Asp	His	Thr	Val	Leu
225				230						235				240	
Pro	Asp	Met	Ile	Glu	Val	Gly	Ser	Phe	Ile	Gly	Met	Ala	Ala	Met	Thr
			245						250				255		
Arg	Ser	Glu	Ile	Thr	Ile	Lys	Asn	Val	Ser	Tyr	Glu	Asn	Leu	Gly	Ile
		260					265					270			
Ile	Pro	Glu	Ser	Phe	Arg	Arg	Leu	Gly	Ile	Lys	Leu	Glu	Gln	Arg	Gly
	275					280						285			
Asp	Asp	Ile	Phe	Val	Pro	Ala	Gln	Asp	Cys	Tyr	Gln	Ile	Glu	Ser	Phe
	290					295					300				
Ile	Asp	Gly	Ser	Ile	Met	Thr	Ile	Ala	Asp	Ala	Pro	Trp	Pro	Gly	Leu
305				310						315				320	
Thr	Pro	Asp	Leu	Leu	Ser	Val	Met	Leu	Val	Val	Ala	Thr	Gln	Ala	Lys
			325					330					335		
Gly	Ser	Val	Leu	Ile	His	Gln	Lys	Met	Phe	Glu	Ser	Arg	Leu	Phe	Phe
		340					345					350			
Val	Asp	Lys	Leu	Ile	Asp	Met	Gly	Ala	Gln	Ile	Ile	Leu	Cys	Asp	Pro

355                      360                      365  
 His Arg Ala Val Val Ile Gly His Asn His Gly Phe Thr Leu Arg Gly  
 370                      375                      380  
 Gly Asn Met Thr Ser Pro Asp Ile Arg Ala Gly Ile Ala Leu Leu Ile  
 385                      390                      395                      400  
 Ala Ala Met Ser Ala Glu Gly Ile Ser Arg Ile His Asn Ile Glu Gln  
 405                      410                      415  
 Ile Asp Arg Gly Tyr Gln Asn Ile Glu Gly Arg Leu Asn Ala Ile Gly  
 420                      425                      430  
 Ala Arg Ile Thr Arg Ile  
 435

<210> 7808  
 <211> 154  
 <212> PRT  
 <213> B.fragilis

<400> 7808  
 Gly Ile Met Asn Ile Leu Tyr Thr Tyr Pro Glu Thr Ile Val Asp Gly  
 1                      5                      10                      15  
 Glu Gly Ile Arg Tyr Ser Ile Tyr Leu Ala Gly Cys Arg His Gly Cys  
 20                      25                      30  
 Pro Gly Cys His Asn Pro Glu Ser Trp Asn Pro Gln Ala Gly Glu Glu  
 35                      40                      45  
 Leu Ser Glu Gly Arg Leu Ala Ser Ile Ile Arg Glu Ile Asn Ser Asn  
 50                      55                      60  
 Pro Leu Leu Asp Gly Val Thr Phe Ser Gly Gly Asp Pro Phe Tyr Asp  
 65                      70                      75                      80  
 Pro Glu Ala Phe Leu Pro Val Ile Arg Arg Val Lys Thr Glu Thr Gly  
 85                      90                      95  
 Gln Asn Ile Trp Cys Tyr Thr Gly Tyr Thr Tyr Glu Glu Ile Glu Ser  
 100                      105                      110  
 Asp Pro Lys Leu Ala Ala Ile Leu Pro Tyr Ile Asp Val Leu Val Asp  
 115                      120                      125  
 Gly Arg Phe Lys Gln Glu Leu Tyr Ser Pro His Leu Glu Phe Arg Gly  
 130                      135                      140  
 Ser Ser Asn Gln Arg Ile Ile Lys Leu Lys  
 145                      150

<210> 7809  
 <211> 210  
 <212> PRT  
 <213> B.fragilis

<400> 7809  
 Asp His Met Asn Ala Ser Lys Thr Asp Ile Arg Ile Thr Ser Pro Asp  
 1                      5                      10                      15  
 Arg Glu Val Leu Ser Tyr Ser Gly Val Pro Lys Glu His Pro Phe Val  
 20                      25                      30  
 Lys Glu Ser Pro Glu Leu Phe Trp Tyr Ala Val Arg Val Thr Tyr Ser  
 35                      40                      45  
 Arg Glu Leu Ala Leu Lys Glu Tyr Leu Asp Gly Glu Cys Ile Glu Asn  
 50                      55                      60  
 Phe Ile Pro Met His Tyr Glu Tyr Ile Val Lys Asn Glu Arg Arg Val  
 65                      70                      75                      80  
 Arg Lys Leu Val Pro Ala Val His Asn Leu Val Phe Ile Arg Ser Ser  
 85                      90                      95  
 Arg Glu Arg Ile Asp Arg Ile Lys Asp Glu Met Gly Met Thr Leu Pro  
 100                      105                      110

Ile Arg Tyr Ile Met Asp Arg Glu Ser Arg Gln Pro Ile Val Val Pro  
 115 120 125  
 Thr Ser Gln Met Arg Ser Phe Met Ala Val Ala Gly Ser Tyr Asp Gln  
 130 135 140  
 Gln Leu Val Tyr Leu Glu Pro Ser Ala Val Ala Phe Arg Lys Gly Gln  
 145 150 155 160  
 Arg Val Arg Val Thr Gly Gly Ile Phe Ala Gly Val Glu Gly Glu Phe  
 165 170 175  
 Ile Arg Val Lys Asn Asp Arg Arg Val Met Val Ser Ile Gln Gly Val  
 180 185 190  
 Met Ala Val Ala Thr Thr Tyr Ile His Pro Ser Leu Ile Glu Pro Leu  
 195 200 205  
 Asp Leu  
 210

<210> 7810

<211> 474

<212> PRT

<213> B.fragilis

<400> 7810

Gly Lys Met Lys Leu Pro Ile Ser Phe Ile Glu Ser Thr Arg Ala Leu  
 1 5 10 15  
 Met Gly Asp Glu Glu Tyr Gln Glu Leu Ser Val Ala Leu Glu Gln Glu  
 20 25 30  
 Pro Pro Ala Ser Val Arg Leu Asn Ser Lys Phe Pro Gly Leu Ala Ala  
 35 40 45  
 Cys Ser Ser Ile Ser Gly Arg Ile Pro Trp Ala Ala Glu Gly Tyr Tyr  
 50 55 60  
 Leu Asn Gln Arg Leu Thr Phe Thr Phe Asp Pro Leu Phe His Ala Gly  
 65 70 75 80  
 Cys Tyr Tyr Val Gln Glu Ala Ser Ser Met Phe Val Glu Gln Val Leu  
 85 90 95  
 Arg Arg Tyr Val Thr Thr Pro Val Lys Met Leu Asp Leu Cys Ala Ala  
 100 105 110  
 Pro Gly Gly Lys Ser Thr His Ala Arg Ser Val Leu Pro Glu Gly Ser  
 115 120 125  
 Leu Leu Val Ala Asn Glu Val Ile Arg Asn Arg Ser Gln Ile Leu Ala  
 130 135 140  
 Glu Asn Leu Thr Lys Trp Gly Tyr Ala Asp Val Val Thr Asn Asn  
 145 150 155 160  
 Asp Pro Ser Asp Phe Ser Arg Ile Gly Ser Phe Phe Asp Val Ile Leu  
 165 170 175  
 Thr Asp Val Pro Cys Ser Gly Glu Gly Met Phe Arg Lys Asp Pro Gly  
 180 185 190  
 Ala Ile Glu Glu Trp Ser Pro Glu Asn Val Glu Ile Cys Trp Gln Arg  
 195 200 205  
 Gln Arg Arg Ile Ile Thr Asp Ile Trp Pro Cys Leu Lys Pro Gly Gly  
 210 215 220  
 Ile Leu Ile Tyr Ser Thr Cys Thr Tyr Asn Thr Arg Glu Asp Glu Glu  
 225 230 235 240  
 Asn Ile Ala Trp Ile Arg Gln Glu Phe Gly Ala Glu Pro Leu Pro Leu  
 245 250 255  
 Ala Val Pro Thr Glu Trp Asn Ile Thr Gly Ser Leu Leu Val Gly Val  
 260 265 270  
 Asp Ala Pro Val Tyr Arg Phe Leu Pro His Lys Thr Gln Gly Glu Gly  
 275 280 285  
 Phe Phe Leu Ala Ala Leu Arg Lys Pro Glu Glu Asp Arg Glu Ala Asp  
 290 295 300



Thr	Asp	Leu	Phe	Ser	Pro	Lys	Lys	Lys	Lys	Ser	Lys	Gly	Asp	Thr	Ala
305					310					315					320
Ala	Ser	Pro	Val	Ser	Lys	Glu	Asn	Leu	Ala	Ile	Ala	Lys	Ser	Trp	Leu
				325					330						335
Ala	Ser	Ser	Asp	Glu	Tyr	Asn	Leu	Leu	Val	Asn	Gly	Thr	Ala	Ile	Thr
			340					345							350
Ala	Phe	Pro	Val	Tyr	Tyr	Gln	Asn	Asp	Leu	Ala	Leu	Leu	Arg	Gln	Ser
		355					360								365
Leu	Arg	Ile	Val	Gln	Ala	Gly	Thr	Glu	Val	Ala	Glu	Val	Lys	Gly	Lys
	370					375					380				
Asp	Leu	Ile	Pro	Ala	His	Gly	Leu	Ala	Met	Ser	Arg	Leu	Leu	Lys	Thr
385					390					395					400
Ser	Val	Phe	Ser	Thr	Glu	Ala	Leu	Thr	Tyr	Glu	Gln	Ala	Ile	Ala	Tyr
				405					410						415
Leu	Arg	Lys	Glu	Ala	Ile	Val	Leu	Pro	Pro	Ser	Val	Pro	Lys	Gly	Tyr
			420					425							430
Val	Leu	Val	Thr	Tyr	Lys	Glu	Ile	Pro	Leu	Gly	Phe	Val	Lys	Asn	Ile
		435					440								445
Gly	Asn	Arg	Ala	Asn	Asn	Leu	Tyr	Pro	Gln	Glu	Trp	Arg	Ile	Arg	Ser
	450					455									460
Gly	Tyr	Leu	Pro	Asp	Asp	Ile	Arg	Thr	Leu						
465					470										

<210> 7811  
 <211> 1032  
 <212> PRT  
 <213> B.fragilis

<400> 7811

Arg	Lys	Lys	Asn	Met	Leu	Asn	Lys	Ile	Ile	His	Phe	Ser	Leu	Gln	Asn
1				5					10					15	
Arg	Ile	Leu	Val	Leu	Val	Ala	Ser	Val	Leu	Leu	Leu	Ile	Gly	Gly	Thr
			20					25						30	
Tyr	Thr	Ala	Met	His	Thr	Glu	Val	Asp	Val	Phe	Pro	Asp	Leu	Asn	Ala
		35				40						45			
Pro	Thr	Val	Val	Ile	Met	Thr	Glu	Ala	Asn	Gly	Met	Ala	Ala	Glu	Glu
	50				55						60				
Val	Glu	Gln	Leu	Val	Thr	Phe	Pro	Val	Glu	Thr	Ala	Val	Asn	Gly	Ala
65					70					75					80
Thr	Gly	Val	Arg	Arg	Val	Arg	Ser	Ser	Ser	Thr	Asn	Gly	Phe	Ser	Val
			85						90					95	
Val	Trp	Val	Glu	Phe	Asp	Trp	Gly	Thr	Asp	Ile	Tyr	Leu	Ala	Arg	Gln
		100						105						110	
Ile	Val	Ser	Glu	Lys	Leu	Ala	Ile	Val	Gly	Glu	Glu	Leu	Pro	Ser	Asn
		115					120							125	
Val	Gly	Lys	Pro	Thr	Leu	Gly	Pro	Gln	Ser	Ser	Ile	Leu	Gly	Glu	Val
	130					135					140				
Leu	Ile	Ile	Gly	Leu	Thr	Ala	Asp	Ser	Thr	Ser	Met	Leu	Asp	Leu	Arg
145					150					155					160
Thr	Ile	Ala	Asp	Trp	Thr	Ile	Arg	Pro	Arg	Leu	Leu	Ser	Thr	Gly	Gly
			165						170						175
Val	Ala	Gln	Val	Ala	Val	Leu	Gly	Gly	Glu	Leu	Lys	Glu	Tyr	Gln	Ile
		180						185						190	
Gln	Leu	Asp	Pro	Glu	Arg	Met	Arg	His	Tyr	Gly	Val	Ser	Met	Asn	Glu
		195					200						205		
Val	Met	Thr	Val	Thr	Arg	Gly	Met	Asn	Leu	Asn	Ala	Asn	Gly	Gly	Val
	210					215					220				
Leu	Tyr	Glu	Tyr	Gly	Asn	Glu	Tyr	Ile	Val	Arg	Gly	Val	Leu	Ser	Thr
225					230					235					240

Ala Asn Ile Glu Gln Leu Gly Lys Ala Val Val Lys Ser Ile Asp Ser  
 245 250 255  
 Val Pro Val Leu Leu Glu Asp Ile Ala Asp Val Arg Ile Gly Pro Lys  
 260 265 270  
 Ala Pro Lys Leu Gly Thr Ala Ser Glu Arg Gly Lys Pro Ala Val Leu  
 275 280 285  
 Met Thr Val Thr Lys Gln Pro Ala Thr Ser Thr Leu Glu Leu Thr Asp  
 290 295 300  
 Lys Leu Glu Ala Ser Leu Gln Asp Leu Arg Lys Asn Leu Pro Pro Asp  
 305 310 315 320  
 Val Lys Val Ser Thr Asp Ile Phe Arg Gln Ser Arg Phe Ile Asp Ser  
 325 330 335  
 Ser Ile Ser Asn Val Lys Lys Ser Leu Phe Glu Gly Gly Ile Phe Val  
 340 345 350  
 Val Ile Val Leu Phe Leu Phe Leu Ala Asn Val Arg Thr Thr Ile Ile  
 355 360 365  
 Ser Leu Val Thr Leu Pro Leu Ser Leu Leu Val Ser Ile Leu Thr Leu  
 370 375 380  
 His Phe Met Gly Leu Thr Ile Asn Thr Met Ser Leu Gly Gly Met Ala  
 385 390 395 400  
 Ile Ala Ile Gly Ser Leu Val Asp Asp Ala Ile Val Asp Val Glu Asn  
 405 410 415  
 Val Tyr Lys Arg Leu Arg Glu Asn Arg Leu Leu Pro Glu Asn Glu Arg  
 420 425 430  
 Leu Ser Val Ile Gln Val Val Phe Asn Ala Ser Lys Glu Val Arg Met  
 435 440 445  
 Pro Ile Leu Asn Ser Thr Leu Ile Ile Val Val Ser Phe Val Pro Leu  
 450 455 460  
 Phe Phe Leu Ser Gly Met Glu Gly Arg Met Leu Val Pro Leu Gly Ile  
 465 470 475 480  
 Ala Phe Ile Val Ala Leu Phe Ala Ser Thr Ile Val Ala Leu Thr Leu  
 485 490 495  
 Thr Pro Val Leu Cys Ser Tyr Leu Leu Gly Lys Glu Lys Gly Asp Lys  
 500 505 510  
 Leu Pro Lys Glu Ala Phe Val Ala Arg Trp Met Lys Gly Val Tyr Glu  
 515 520 525  
 Lys Ala Leu Thr Trp Val Leu Ile His Lys Arg Leu Thr Leu Gly Ser  
 530 535 540  
 Thr Ile Gly Leu Phe Ile Ile Thr Leu Gly Phe Phe Thr Leu Gly  
 545 550 555 560  
 Arg Ser Phe Leu Pro Pro Phe Asn Glu Gly Ser Phe Thr Ile Asn Ile  
 565 570 575  
 Ser Ser Leu Pro Gly Ile Ser Leu Glu Glu Ser Asp Lys Met Gly His  
 580 585 590  
 Arg Ala Glu Glu Leu Leu Leu Ser Ile Pro Glu Ile Gln Thr Val Ala  
 595 600 605  
 Arg Lys Thr Gly Arg Ala Glu Leu Asp Glu His Ala Leu Gly Val Asn  
 610 615 620  
 Val Ser Glu Ile Glu Ala Pro Phe Glu Leu Lys Asp Arg Ser Arg Asn  
 625 630 635 640  
 Glu Leu Met Ala Asp Val Arg Glu Lys Leu Gly Thr Ile Thr Gly Ala  
 645 650 655  
 Asn Ile Glu Ile Gly Gln Pro Ile Ser His Arg Ile Asp Ala Met Leu  
 660 665 670  
 Ser Gly Thr Lys Ala Asn Ile Ala Ile Lys Leu Phe Gly Asp Asp Leu  
 675 680 685  
 Asn Lys Met Phe Ser Leu Gly Asn Gln Ile Lys Glu Ala Ile Gly Asn  
 690 695 700  
 Ile Pro Gly Ile Ala Asp Leu Asn Val Glu Gln Gln Ile Glu Arg Pro

705 710 715 720  
 Gln Leu Lys Ile Thr Pro Lys Arg Glu Met Leu Ala Lys Tyr Gly Ile  
 725 730 735  
 Thr Leu Pro Glu Phe Ser Glu Tyr Ile Asn Val Ala Leu Ala Gly Glu  
 740 745 750  
 Val Ile Ser Gln Val Tyr Glu Gln Gly Lys Ser Phe Asp Leu Ile Val  
 755 760 765  
 Lys Val Lys Asn Asn Phe Arg Asp Glu Ala Glu Lys Ile Arg Asn Leu  
 770 775 780  
 Met Val Asp Thr Gln Asp Gly Lys Lys Val Pro Leu Ser Tyr Ile Ala  
 785 790 795 800  
 Asp Val Ala Ser Ser Met Gly Pro Asn Thr Ile Asn Arg Glu Asn Val  
 805 810 815  
 Lys Arg Lys Ile Val Ile Ser Ala Asn Val Ala Asp Arg Asp Leu Arg  
 820 825 830  
 Ser Val Val Asn Asp Ile Gln Lys Gln Val Asp Glu Gln Ile Lys Leu  
 835 840 845  
 Pro Glu Gly Tyr His Ile Glu Tyr Gly Gly Gln Phe Glu Ser Glu Gln  
 850 855 860  
 Ala Ala Ser Arg Thr Leu Ala Leu Thr Ser Phe Met Ser Ile Val Val  
 865 870 875 880  
 Ile Phe Leu Leu Leu Tyr His Glu Phe Arg Ser Val Lys Glu Ser Ala  
 885 890 895  
 Val Ile Leu Ile Asn Leu Pro Leu Ala Leu Ile Gly Gly Val Phe Ala  
 900 905 910  
 Leu Leu Ile Thr Thr Gly Glu Ile Ser Ile Pro Ala Ile Ile Gly Phe  
 915 920 925  
 Ile Ser Leu Phe Gly Ile Ala Thr Arg Asn Gly Met Leu Leu Ile Ser  
 930 935 940  
 His Tyr Asn His Leu Gln Gln Val Glu Gly Leu Gly Val Tyr Glu Ser  
 945 950 955 960  
 Val Ile Arg Gly Ser Leu Asp Arg Leu Asn Pro Ile Val Met Thr Ala  
 965 970 975  
 Leu Ser Ser Ala Leu Ala Leu Ile Pro Leu Ala Leu Ser Gly Ser Leu  
 980 985 990  
 Pro Gly Asn Glu Ile Gln Ser Pro Met Ala Lys Val Ile Leu Gly Gly  
 995 1000 1005  
 Leu Leu Thr Ser Thr Phe Leu Asn Gly Phe Ile Ile Pro Ile Val Tyr  
 1010 1015 1020  
 Leu Met Met Asn Gly Lys Arg Lys  
 1025 1030

&lt;210&gt; 7812

&lt;211&gt; 139

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7812

Lys Ala Asn Leu Leu Tyr Lys Met Asp Ile Glu Glu Ile Lys Asp Phe  
 1 5 10 15  
 Arg Pro Leu Ile Leu Val Ala Glu Asp Asp Asp Ser Asn Phe Lys Leu  
 20 25 30  
 Ile Lys Ala Ile Ile Gly Lys Lys Cys Asp Ile Leu Trp Ala Lys Asn  
 35 40 45  
 Gly Glu Glu Met Leu Asn Leu Tyr Arg Glu His Thr Gln Asp Ala His  
 50 55 60  
 Ala Ile Leu Met Asp Ile Lys Met Pro Ile Met Asn Gly Leu Glu Ala  
 65 70 75 80  
 Thr Arg Ile Ile Arg Glu Glu Gly Ala Ser Leu Pro Ile Ile Met Gln

				85					90					95	
Thr	Ala	Tyr	Ala	Phe	Ser	Ser	Asp	Arg	Glu	Asn	Ala	Met	Gln	Ala	Gly
			100						105				110		
Ala	Ser	Glu	Val	Leu	Val	Lys	Pro	Ile	Thr	Val	Ser	Ala	Leu	Arg	Gly
		115					120					125			
Cys	Leu	Ser	Ser	Tyr	Phe	Pro	Glu	Ile	Lys	Trp					
	130						135								

&lt;210&gt; 7813

&lt;211&gt; 483

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7813

Tyr	Met	Asn	Leu	Asn	Pro	Ile	Ile	Asn	Asn	Phe	Gln	Arg	Pro	Ile	Arg
1				5					10					15	
Lys	Val	Gln	Ile	Cys	Cys	Ile	Leu	Ile	Phe	Ser	Cys	Ala	Ala	Cys	Ser
			20					25				30			
Leu	Asn	Ile	Pro	Tyr	Glu	Asn	Gln	Tyr	Ser	Asp	Pro	Asp	Ala	Ile	Thr
		35					40				45				
Thr	Val	Thr	Ala	Ala	Arg	Glu	Leu	Leu	Ala	Ser	Ala	Tyr	Asp	Ala	Ile
	50					55				60					
Pro	Lys	Pro	Glu	Phe	Ser	Leu	Ser	Val	Leu	Ser	Asp	Asp	Phe	Gln	Pro
65					70					75					80
Thr	Phe	Leu	Ile	Asn	Leu	Asn	Ala	Asp	Leu	Asn	Asn	Leu	Tyr	Lys	Trp
				85					90					95	
His	Pro	Lys	Pro	Met	Glu	Asp	Leu	Ser	Asn	Ser	Leu	Trp	Glu	Lys	Tyr
			100					105					110		
Tyr	Ser	Ala	Ile	Ala	Ile	Ala	Asn	Thr	Val	Leu	Glu	Arg	Ile	His	Tyr
		115					120					125			
Val	Ser	Pro	Ile	Ser	Asp	Ser	Asp	Lys	Gln	Glu	Leu	Gln	Cys	Ile	Val
	130					135					140				
Ser	Glu	Ala	Lys	Thr	Leu	Lys	Ala	Tyr	Cys	Tyr	Phe	Asn	Leu	Leu	Arg
145					150					155					160
Leu	Phe	Ala	Pro	Thr	Tyr	Pro	Glu	Gly	Pro	Glu	Lys	Asp	Gly	Ile	Ile
				165					170					175	
Leu	Lys	Glu	Arg	Phe	Glu	Leu	Ala	Phe	Leu	Lys	Arg	Ser	Ser	Ile	Ser
			180					185					190		
Glu	Cys	Val	Asn	Ala	Ile	Arg	Gln	Leu	Leu	Thr	Glu	Ala	Val	Thr	Val
		195					200					205			
Asp	Asn	Arg	Pro	Ser	Gln	Val	Tyr	Trp	Phe	Ser	Arg	Gln	Ser	Ala	Tyr
	210					215					220				
Tyr	Leu	Leu	Ala	Ala	Leu	Glu	Leu	Tyr	Ala	Glu	Asn	Tyr	Asp	Lys	Ala
225					230					235					240
Glu	Glu	Tyr	Ala	Leu	Lys	Ile	Leu	Ser	Ser	Thr	Asn	Ala	Tyr	Asn	Val
				245					250					255	
Leu	Ala	Pro	Val	His	Tyr	Lys	Lys	Leu	Trp	Glu	Gln	Glu	Pro	Cys	Glu
			260					265					270		
Glu	Cys	Ile	Phe	Ser	Leu	His	Thr	Thr	Asn	Ser	Tyr	Tyr	Thr	Asp	Met
		275					280					285			
Asn	Tyr	Glu	Arg	Lys	Lys	Gly	Asp	Tyr	Phe	Thr	Ile	Asn	Ser	Thr	Leu
	290					295					300				
Thr	Gln	Leu	Tyr	Thr	Ala	Asn	Asp	Ile	Arg	Tyr	Glu	Ala	Thr	Val	Tyr
305					310					315					320
Pro	Gln	Glu	Met	Pro	Gly	Glu	Ser	Ile	Gly	Glu	Thr	Leu	Pro	Val	Leu
				325					330					335	
Tyr	Leu	Gly	Lys	Tyr	Asn	Lys	Gln	Asn	Trp	Asn	Tyr	Lys	Pro	Ile	Gln
			340					345					350		
Tyr	Ile	Asn	Lys	Leu	Arg	Val	Ser	Gly	Ile	Cys	Phe	Ile	Leu	Ala	Glu

355 360 365  
 Ala Tyr Cys Gln Asp Gln Lys Gly His Asp Ala Leu Ala Leu Glu Val  
 370 375 380  
 Ile Asn Asn Tyr Leu Ala Gln Arg Glu Ala Pro Leu Leu Asp Thr Ser  
 385 390 395 400  
 Leu Ser Gly Ala Pro Leu Leu Lys Ala Ile Leu Gln Glu Lys Trp Lys  
 405 410 415  
 Glu Phe Ala Gly Glu Gly Glu Arg Tyr Phe Asp Leu Lys Arg Tyr Arg  
 420 425 430  
 Lys Ser Leu Leu Ser Asp Trp Asn Leu Ser Ala Thr Met Lys Asn Lys  
 435 440 445  
 Pro Ile Lys Pro Asp Asp Tyr Arg Trp Leu Phe Pro Ile Pro Lys Gly  
 450 455 460  
 Glu Tyr Leu Tyr Asn Glu Asn Ile Ser Gln Asn Ala Gly Trp Thr Lys  
 465 470 475 480  
 Ile Glu Lys

<210> 7814

<211> 429

<212> PRT

<213> B.fragilis

<400> 7814

Ile Lys Thr Glu Val Leu Lys Leu Tyr Val Leu Ile Ile Ala Ile Ile  
 1 5 10 15  
 Leu Ser Ile Gly Thr Ala Arg Thr Gln Asn Ile Asp Ser Leu Leu Met  
 20 25 30  
 Gln Arg Glu Asp Thr Thr Gln Phe Ile Arg Ser Asp Ser Leu Val Leu  
 35 40 45  
 Gln Phe Leu Glu Tyr Ser Asn Ile Pro Ile Thr Asp Asn Asn Lys Val  
 50 55 60  
 Lys Leu Ile Lys Ser Gly Arg Glu Lys Phe Glu Asp Leu Phe Glu Ala  
 65 70 75 80  
 Ile Arg Gly Ala Lys His His Ile His Leu Glu Tyr Phe Asn Phe Arg  
 85 90 95  
 Asn Asp Ser Ile Ala Asn Ala Leu Phe Asp Leu Leu Gly Glu Lys Val  
 100 105 110  
 Lys Glu Gly Val Lys Val Arg Ala Met Phe Asp Ala Phe Gly Asn Trp  
 115 120 125  
 Ser Asn Asn Lys Pro Leu Lys Lys Arg His Leu Lys Ala Ile Arg Glu  
 130 135 140  
 Lys Gly Ile Glu Ile Val Lys Phe Asp Pro Phe Lys Phe Pro Tyr Ile  
 145 150 155 160  
 Asn His Ala Ala His Arg Asp His Arg Lys Ile Ala Val Ile Asp Gly  
 165 170 175  
 Lys Ile Gly Tyr Thr Gly Gly Met Asn Ile Ala Asp Tyr Tyr Ile Asn  
 180 185 190  
 Gly Leu Pro Lys Ile Gly Thr Trp Arg Asp Met His Ile Arg Ile Glu  
 195 200 205  
 Gly Asp Ala Val Asn Ile Leu Gln Glu Ile Phe Leu Asp Ile Trp Asn  
 210 215 220  
 Lys Thr Thr Lys Gln Asn Ile Val Gly Glu Glu Tyr Phe Pro Asn His  
 225 230 235 240  
 Pro Glu Arg Ala Asp Ser Cys Asn Thr Val Ile Ser Ile Val Asp Arg  
 245 250 255  
 Thr Pro Lys Arg Asn Ser Arg Met Leu Ser His Thr Tyr Ala Met Ser  
 260 265 270  
 Ile Tyr Ala Ala Gln His Asp Val Arg Ile Val Asn Pro Tyr Phe Val

275                      280                      285  
 Pro Thr Ser Ser Ile Arg Lys Ala Leu Lys Arg Ala Leu Asn Arg Gly  
 290                      295                      300  
 Thr Lys Val Glu Ile Met Ile Ser Ser Lys Ser Asp Ile Pro Phe Thr  
 305                      310                      315                      320  
 Pro Asp Ala Ser Leu Tyr Ala Val Gln Lys Leu Met Lys Lys Gly Ala  
 325                      330                      335  
 Met Ile Tyr Leu Tyr Asn Gly Gly Phe His His Ser Lys Ile Met Met  
 340                      345                      350  
 Val Asp Asp Leu Phe Cys Thr Val Gly Thr Ala Asn Leu Asn Ser Arg  
 355                      360                      365  
 Ser Leu Arg Tyr Asp Tyr Glu Thr Asn Ala Phe Ile Phe Asp Lys Asp  
 370                      375                      380  
 Ile Thr Gln Gln Leu Asn Asp Val Phe Glu Ala Asp Met Leu His Cys  
 385                      390                      395                      400  
 Thr Arg Leu Thr Pro Glu Met Trp Lys Gln Lys Ser Ala Trp Lys Lys  
 405                      410                      415  
 Phe Lys Cys Trp Phe Ala Asn Leu Phe Thr Pro Phe Leu  
 420                      425

&lt;210&gt; 7815

&lt;211&gt; 448

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7815

Ile Val Asp Glu Ile Gly Gly Asn Leu His Gln Ser Gly Glu Gln Thr  
 1                      5                      10                      15  
 Ala Asp Gln Cys Arg Tyr Pro Ile Glu Phe Ser Val Gly Lys Ser Gln  
 20                      25                      30  
 Cys Thr Thr Tyr His Tyr Arg Ser Asn Gly Thr Cys Gln Cys Phe Gly  
 35                      40                      45  
 Ala Gly Arg Lys Tyr Pro Cys Leu Gln Arg Val Thr Phe His Phe Phe  
 50                      55                      60  
 His Phe Leu Phe Leu Ser Val Phe Glu Arg Thr Lys Ile Gly Gln  
 65                      70                      75                      80  
 Lys Thr Tyr Ile Phe Ala Phe Leu Ser Ile Phe Ala Leu Leu Ile Leu  
 85                      90                      95  
 Glu Asn Met Lys Lys Ile Ile Tyr Leu Leu Ala Ala Leu Leu Leu Leu  
 100                      105                      110  
 Leu Ser Ser Cys Lys Ser Lys Lys Asn Leu Val Ser Pro Ile Pro Arg  
 115                      120                      125  
 Pro Val Leu Asn Val Asp Ser Val Arg Pro Asp Ser Ser Asp Val Val  
 130                      135                      140  
 Ala Arg Leu Phe Ser Pro Asp Thr Ser Glu Leu Lys Lys Phe Ser Val  
 145                      150                      155                      160  
 Lys Arg Lys Arg Glu Lys Thr His Val Ala Ser Pro Val Ile Thr Arg  
 165                      170                      175  
 Ser Ala Pro Ser Ile Val Ala Arg Gly Thr Arg Ile Thr Ser Ser Ala  
 180                      185                      190  
 Val Ser Val Ser Ser Val Tyr Pro Gly Ile Asp Arg Val Lys Lys Tyr  
 195                      200                      205  
 Glu Phe Thr His Arg Asp Val Pro Asp Ala Phe Asp Gly Phe Arg Ile  
 210                      215                      220  
 Ala Phe Ile Ser Asp Leu His Tyr Lys Ser Leu Phe Gln Gly Glu Gly  
 225                      230                      235                      240  
 Leu Glu Ser Leu Val Arg Leu Leu Asn Ala Gln His Ala Asp Val Leu  
 245                      250                      255  
 Leu Met Gly Gly Asp Tyr Gln Glu Gly Cys Gln Tyr Val Pro Glu Leu

260	265	270
Phe Ala Ala Leu Ala Lys Val Lys Thr Pro Met Gly Thr Tyr Gly Val		
275	280	285
Met Gly Asn Asn Asp Tyr Glu Arg Cys His Asp Glu Ile Ile Arg Glu		
290	295	300
Met Gln Arg Tyr Gly Met Arg Pro Leu Glu His Gln Ile Asp Thr Leu		
305	310	315
Arg Arg Asp Gly Ala Gln Ile Ile Leu Ala Gly Val Arg Asn Pro Phe		
325	330	335
Asp Leu Ala Asn Asn Gly Val Ser Pro Thr Leu Ser Leu Ser Pro Ser		
340	345	350
Asp Phe Val Ile Leu Leu Val His Thr Pro Asp Tyr Ala Glu Asp Val		
355	360	365
Ser Val Ala Asn Ser Asp Leu Val Leu Ala Gly His Thr His Gly Gly		
370	375	380
Gln Val Arg Ile Leu Gly Tyr Ala Pro Ile Ile Pro Ser His Tyr Gly		
385	390	395
Ser Arg Phe Leu Thr Gly Leu Lys Tyr Asn Ser Ala Lys Ile Pro Met		
405	410	415
Ile Val Thr Asn Gly Ile Gly Thr Ser Asn Lys Asn Ile Arg Ile Gly		
420	425	430
Ala Pro Ala Glu Ile Val Ile Ile Thr Leu His Arg Leu Arg Asn Glu		
435	440	445

&lt;210&gt; 7816

&lt;211&gt; 482

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7816

Lys Met Ile Glu Leu Thr Gln Glu Glu Leu Lys Gln His Phe Ser Glu		
1	5	10
Pro Ile Phe Gly Gln Ile Ser Glu Thr Ala Asp Ala Leu Gly Leu Glu		
20	25	30
Cys Tyr Val Val Gly Gly Tyr Val Arg Asp Ile Phe Leu Gln Arg Pro		
35	40	45
Ser Lys Asp Ile Asp Val Val Val Gly Ser Gly Ile Ala Met Ala		
50	55	60
Glu Ala Leu Gly Lys Arg Leu Gly Arg Gly Ala His Val Ser Val Phe		
65	70	75
Lys Asn Phe Gly Thr Ala Gln Val Lys Cys His Gly Thr Glu Val Glu		
85	90	95
Phe Val Gly Ala Arg Lys Glu Ser Tyr Gln Arg Asp Ser Arg Lys Pro		
100	105	110
Met Val Glu Asp Gly Thr Leu Glu Asp Asp Gln Asn Arg Arg Asp Phe		
115	120	125
Thr Ile Asn Ala Leu Ala Val Cys Leu Asn Lys Gly Arg Phe Gly Glu		
130	135	140
Leu Val Asp Pro Phe Gly Gly Met Asn Asp Leu Lys Glu Lys Ile Ile		
145	150	155
Arg Thr Pro Leu Asp Pro Asp Ile Thr Phe Ser Asp Asp Pro Leu Arg		
165	170	175
Met Met Arg Cys Ile Arg Phe Ala Thr Gln Leu Asn Phe Tyr Ile Asp		
180	185	190
Asp Asp Thr Phe Glu Ser Leu Cys Arg Asn Arg Glu Arg Ile Glu Ile		
195	200	205
Ile Ser Arg Glu Arg Ile Ala Asp Glu Leu Asn Lys Ile Met Leu Ser		
210	215	220
Pro Ile Pro Ser Lys Gly Phe Ile Asp Leu Asp Arg Ser Gly Leu Leu		

225 230 235 240  
 Glu Leu Ile Phe Pro Glu Leu Val Ala Leu Gln Gly Val Glu Thr Arg  
 245 250 255  
 Asn Gly Arg Ala His Lys Asp Asn Phe Tyr His Thr Leu Glu Val Leu  
 260 265 270  
 Asp Asn Ile Ser Arg Val Thr Asp Asn Leu Trp Leu Arg Trp Ser Ala  
 275 280 285  
 Leu Leu His Asp Ile Ala Lys Pro Val Thr Lys Arg Trp Glu Pro Lys  
 290 295 300  
 Ala Gly Trp Thr Phe His Asn His Asn Phe Ile Gly Glu Lys Met Ile  
 305 310 315 320  
 Pro Asn Ile Phe Arg Lys Met Lys Leu Pro Met Asn Glu Lys Met Lys  
 325 330 335  
 Tyr Val Gln Lys Met Val Ser Leu His Met Arg Pro Ile Val Ile Ala  
 340 345 350  
 Asp Asp Val Val Thr Asp Ser Ala Val Arg Arg Leu Leu Phe Glu Ala  
 355 360 365  
 Gly Asp Asp Ile Asp Asp Leu Met Thr Leu Cys Glu Ala Asp Ile Thr  
 370 375 380  
 Ser Lys Asn Met Glu Arg Lys Gln Arg Phe Leu Asn Asn Phe Gln Leu  
 385 390 395 400  
 Val Arg Gln Lys Leu Lys Asp Leu Glu Glu Lys Asp Arg Val Arg Asn  
 405 410 415  
 Phe Gln Pro Pro Val Ser Gly Glu Glu Ile Met Glu Val Phe Asn Leu  
 420 425 430  
 Gly Pro Cys Arg Gln Val Gly Ser Leu Lys Ser Ala Ile Lys Asp Ala  
 435 440 445  
 Ile Leu Asp Gly Val Ile Pro Asn Glu Tyr Glu Ala Ala Tyr Ala Phe  
 450 455 460  
 Met Leu Gln Lys Ala Ala Lys Met Gly Leu Lys Pro Val Gln Asn Lys  
 465 470 475 480  
 Glu Val

<210> 7817  
 <211> 205  
 <212> PRT  
 <213> B.fragilis

<400> 7817  
 His Arg Ala Asp Arg Pro Arg Ile Ser Lys Tyr Arg Arg Ser Thr Gln  
 1 5 10 15  
 Arg Tyr Arg Cys Lys Asn Tyr Thr Asn Met Ile Lys Arg Glu Asp Val  
 20 25 30  
 Tyr Lys Ile Gly Leu Phe Asn Lys Pro His Gly Ile His Gly Glu Leu  
 35 40 45  
 Ser Phe Thr Phe Thr Asp Asp Ile Phe Asp Arg Ala Asp Cys Asp Tyr  
 50 55 60  
 Leu Ile Cys Arg Leu Asp Asp Ile Phe Val Pro Phe Phe Ile Glu Glu  
 65 70 75 80  
 Tyr Arg Phe Arg Ser Asp Ser Thr Ala Leu Val Lys Leu Glu Gly Val  
 85 90 95  
 Asp Thr Ala Glu Arg Ala Arg Met Phe Thr Asn Val Glu Val Tyr Phe  
 100 105 110  
 Pro Val Lys His Ala Glu Glu Ala Ala Pro Gly Glu Leu Ser Trp Asp  
 115 120 125  
 Phe Phe Val Gly Phe Arg Val Glu Asp Val Arg His Gly Ala Leu Gly  
 130 135 140  
 Glu Val Thr Asp Val Asp Thr Ser Thr Val Asn Thr Leu Phe Val Val



145 150 155 160  
 Asp Arg Asp Gly Asp Glu Leu Leu Ile Pro Ala Gln Glu Lys Leu Ile  
 165 170 175  
 Ala Gly Ile Asp Gln Lys His Lys Ile Ile Thr Val Asp Leu Pro Glu  
 180 185 190  
 Gly Leu Leu Ser Leu Asp Glu Cys Asp Asp Glu Glu Ser  
 195 200 205

<210> 7818  
 <211> 98  
 <212> PRT  
 <213> B.fragilis

<400> 7818  
 Asn His Lys Glu Leu Phe Tyr Gly Ser Ala Thr Lys Ile Asn Lys Ile  
 1 5 10 15  
 Gly Leu Leu Arg Leu Gly Glu Val Val Ile Tyr Lys Phe Phe Tyr Thr  
 20 25 30  
 Leu Lys Leu Asp Gly Glu Gly Val Glu Gly Arg Leu His His Arg Phe  
 35 40 45  
 His Arg Ser Thr Ser Asn Val Ile Val Asp Ser Pro Ser Asp Lys Pro  
 50 55 60  
 Leu Ile Phe Val Gln Ser Val Val Ile Ser Thr Leu Val Tyr Leu Tyr  
 65 70 75 80  
 Leu Phe Gln Phe Asp Asn Pro Leu Ile Thr Ala Ser Ser Glu Phe Gln  
 85 90 95  
 Met Arg

<210> 7819  
 <211> 404  
 <212> PRT  
 <213> B.fragilis

<400> 7819  
 Thr Glu Lys Glu Asn Asn Lys Asn Phe Asn Asn Tyr Met Lys Arg Ile  
 1 5 10 15  
 Thr Ile Leu Ala Ala Thr Leu Phe Ala Leu Ser Gly Leu Gln Ala Gln  
 20 25 30  
 Thr Ser Ile Asp Gly Val Leu Arg Asn Ile Glu Thr Asn Asn Lys Glu  
 35 40 45  
 Leu Gln Ala Asn Ala Gln Leu Ile Ala Ser Gln Lys Leu Glu Thr Arg  
 50 55 60  
 Thr Asp Asn Asn Leu Pro Asp Pro Thr Leu Ser Tyr Ala His Leu Trp  
 65 70 75 80  
 Asn Asn Lys Asp Lys Asn Asn Thr Ile Gly Glu Leu Val Val Ser Gln  
 85 90 95  
 Ser Phe Asp Phe Pro Ser Leu Tyr Ala Thr Arg Ser Gln Leu Asn Arg  
 100 105 110  
 Leu Lys Ala Gly Ala Phe Asp Gly Gln Lys Ser Val Phe Arg Gln Gly  
 115 120 125  
 Ile Leu Leu Gln Ala Lys Asp Val Cys Leu Asp Ile Ile Met Leu Arg  
 130 135 140  
 Lys Gln Gln Gln Ile Leu Thr Glu Arg Leu Arg Asn Ala Glu Glu Leu  
 145 150 155 160  
 Ser Ala Met Tyr Ala Lys Arg Leu Gln Thr Gly Asp Ala Asn Val Ile  
 165 170 175  
 Glu Thr Asn Lys Ile Asn Leu Glu Leu Leu Asn Val Lys Thr Glu Ala  
 180 185 190

Ser Leu Asn Glu Thr Ala Leu Arg Asn Lys Ile Gln Glu Leu Thr Ala  
 195 200 205  
 Leu Asn Gly Asn Ile Pro Val Val Phe Glu Asp Ala Asp Tyr Pro Ala  
 210 215 220  
 Val Ile Phe Pro Ser Asn Tyr Glu Glu Leu Lys Thr Glu Val Leu Ala  
 225 230 235 240  
 Ser Asp Tyr Thr Leu Gln Ala Leu Asn Ser Glu Ser Ala Ala Ala Arg  
 245 250 255  
 Lys Gln Ile Ala Val Asn Lys Ser Gln Trp Leu Pro Lys Leu Glu Leu  
 260 265 270  
 Gly Tyr Arg Arg Asn Thr Glu Ser Gly Glu Pro Phe Asn Gly Val Val  
 275 280 285  
 Val Gly Phe Ser Phe Pro Leu Phe Glu Asn Arg Asn Lys Val Lys Ile  
 290 295 300  
 Ala Lys Ala Gln Ser Leu Asn Val Asp Leu Gln Arg Ala Asn Thr Ser  
 305 310 315 320  
 Val Gln Val Glu Ser Glu Leu Thr Gln Leu Tyr Arg Glu Ala His Thr  
 325 330 335  
 Leu Arg Thr Ser Met Glu Glu Tyr Glu Lys Thr Phe Gln Ala Gln Gln  
 340 345 350  
 Asp Leu Ser Leu Leu Lys Gln Ala Leu Thr Gly Gly Gln Ile Ser Met  
 355 360 365  
 Ile Glu Tyr Phe Val Glu Val Ser Val Val Tyr Gln Ser Lys Gln Asn  
 370 375 380  
 Tyr Leu Gln Leu Glu Asn Gln Tyr Gln Lys Ala Met Ala Lys Ile Tyr  
 385 390 395 400  
 Lys Asn Lys Leu

<210> 7820  
 <211> 176  
 <212> PRT  
 <213> B.fragilis

<400> 7820  
 Thr Ser Met Glu His Lys Lys Thr Lys Ile Val Leu Tyr Ala Asp Val  
 1 5 10 15  
 Ile Ile His Phe Met Glu Ala Asn Tyr Phe Ser Ile Leu Pro Asp Ile  
 20 25 30  
 Phe Pro Glu Tyr Glu Tyr Leu Ile Leu Asp Val Val Tyr Asn Glu Ile  
 35 40 45  
 Ser Gln Asn Ser Gly Thr Lys Asp Phe Ile Asp Lys Tyr Leu His Phe  
 50 55 60  
 Phe Pro Lys Leu Lys Lys Glu Val Phe Ser Pro Lys Arg Glu Ser Met  
 65 70 75 80  
 Lys Glu Phe Phe Leu Leu Gln Arg Thr Leu Gly Lys Gly Glu Ser Ala  
 85 90 95  
 Cys Met Ile Tyr Cys Arg Asp Asn Arg Asp Val Leu Gly Ser Ser Asn  
 100 105 110  
 Leu Lys Asp Ile Lys Glu Tyr Cys Ser Lys Asn Asn Ile Thr Tyr Leu  
 115 120 125  
 Thr Thr Leu Asp Phe Leu Tyr Tyr Ala Tyr Cys Arg Lys Lys Met Thr  
 130 135 140  
 Glu Gln Glu Cys Lys Glu Phe Met Gln Glu Val Asn Asn Ala Gly Ser  
 145 150 155 160  
 Lys Leu Pro Ile Ile Asp Ile Thr Gln Tyr Thr Cys Thr Val Gln Ile  
 165 170 175

<210> 7821

<211> 300  
 <212> PRT  
 <213> B.fragilis

<400> 7821

Lys Met Ile Leu Gln Thr Ile Lys Gln Ile Ser Cys Leu Leu Cys Leu  
 1 5 10 15  
 Cys Cys Phe Leu Gln Gln Ser Ala Phe Ser Gln Asp Asp Lys Asp Lys  
 20 25 30  
 Pro Ala Tyr Thr Leu Phe Asp Asn Thr Gly Lys Gln Ile Ser Tyr Gly  
 35 40 45  
 Glu Leu Ile Lys Arg Leu Ser Gly Tyr Asp Val Ile Phe Leu Gly Glu  
 50 55 60  
 Leu His Asn Cys Pro Ile Thr His Trp Leu Glu Phe Glu Ile Thr Arg  
 65 70 75 80  
 Ser Ile Tyr Asn Ile His Lys Asp Gln Leu Met Leu Gly Ala Glu Met  
 85 90 95  
 Phe Glu Ser Asp Asn Gln Leu Ile Phe Asp Glu Tyr Met Gln Gln Lys  
 100 105 110  
 Ile Ser Tyr Asp Arg Phe Glu Ala Glu Ala Arg Leu Trp Asp Asn Tyr  
 115 120 125  
 Arg Thr Asp Tyr Tyr Pro Val Phe Phe Ala Lys Glu His His Ile  
 130 135 140  
 Pro Phe Ile Ala Thr Asn Ile Pro Arg Arg Tyr Ala Asn Ile Val Lys  
 145 150 155 160  
 Asn Lys Gly Phe Glu Ala Leu Asp Ser Leu Ser Glu Glu Ala Lys Arg  
 165 170 175  
 Tyr Ile Ala Pro Leu Pro Ile Asp Phe Glu Tyr Asp Glu Ala Gln Ser  
 180 185 190  
 Ala Ala Ala Phe Ser Met Met Asn Met Met Gly Gly Arg Arg Ala Gly  
 195 200 205  
 Asp Asn Arg Lys Leu Ala Gln Ala Gln Ala Ile Lys Asp Ala Thr Met  
 210 215 220  
 Gly Trp Phe Ile Ala Arg Asn Ile Lys Asn Lys Phe Leu His Ile Asn  
 225 230 235 240  
 Gly Ser Tyr His Ser Asn Arg Gln Gly Gly Ile Ile Pro Tyr Leu Leu  
 245 250 255  
 Arg Tyr Arg Pro Asn Thr Ser Ile Val Thr Val Thr Ser Val Arg Gln  
 260 265 270  
 Glu Ser Ile Arg Lys Leu Asp Asp His Lys Gly Leu Ala Asp Phe  
 275 280 285  
 Tyr Ile Cys Val Pro Glu Asp Met Val Asn Ser Tyr  
 290 295 300

<210> 7822  
 <211> 105  
 <212> PRT  
 <213> B.fragilis

<400> 7822

Tyr Val Val Cys Phe Cys Tyr Leu Tyr Ala Ile Val Lys Phe Arg Leu  
 1 5 10 15  
 Phe Ile Asn Leu Lys Leu Lys Asn Met Lys Asp Leu Glu Asp Asp Glu  
 20 25 30  
 Arg Glu Phe Pro Ile Arg Val Tyr Thr Lys Val Glu Leu Ala Leu Leu  
 35 40 45  
 Tyr Ala Pro His Leu Ser Glu Asn Ala Ala Leu Asn Asn Leu Ser Arg  
 50 55 60  
 Trp Met Arg His Asn Lys Leu Leu Met Ala Ala Leu Glu Glu Val Gly

65					70						75				80
Tyr	Tyr	Lys	Tyr	Arg	His	Ser	Phe	Thr	Pro	Lys	Glu	Val	Arg	Leu	Ile
				85					90					95	
Phe	Arg	Tyr	Met	Gly	Glu	Pro	Gly	Ala							
			100					105							

&lt;210&gt; 7823

&lt;211&gt; 295

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7823

Leu	Val	Thr	Cys	Asn	Ile	Gln	Asn	Met	Lys	Gly	Ile	Ile	Leu	Ala	Gly
1				5					10					15	
Gly	Ser	Ala	Thr	Arg	Leu	Tyr	Pro	Leu	Ser	Lys	Ala	Ile	Ser	Lys	Gln
			20					25					30		
Met	Met	Pro	Val	Tyr	Asp	Lys	Pro	Met	Ile	Tyr	Tyr	Pro	Leu	Ser	Thr
		35					40					45			
Leu	Met	Leu	Ala	Gly	Ile	Arg	Glu	Val	Leu	Val	Ile	Ser	Thr	Pro	Arg
	50				55						60				
Asp	Leu	Pro	Leu	Phe	Arg	Glu	Leu	Leu	Gly	Ser	Gly	Glu	Glu	Phe	Gly
65				70					75					80	
Met	Ser	Phe	Ser	Tyr	Leu	Val	Gln	Glu	Gln	Pro	Asn	Gly	Leu	Ala	Gln
				85				90						95	
Ala	Phe	Val	Leu	Gly	Ala	Asp	Phe	Leu	Asn	Gly	Glu	Pro	Gly	Cys	Leu
			100					105					110		
Ile	Leu	Gly	Asp	Asn	Leu	Phe	Tyr	Gly	Gln	Gly	Phe	Ser	Ala	Met	Leu
		115					120					125			
Arg	Arg	Ala	Ala	Thr	Ile	Glu	Lys	Gly	Ala	Cys	Ile	Phe	Gly	Tyr	Tyr
	130					135					140				
Val	Lys	Asp	Pro	Arg	Ala	Tyr	Gly	Val	Val	Glu	Phe	Asp	Gly	Ser	Gly
145					150					155				160	
Lys	Val	Val	Ser	Leu	Glu	Glu	Lys	Pro	Ala	Val	Pro	Lys	Ser	Asn	Tyr
			165					170					175		
Ala	Val	Pro	Gly	Leu	Tyr	Phe	Tyr	Asp	Ala	Thr	Val	Thr	Glu	Lys	Ala
		180					185					190			
Leu	Ala	Leu	Glu	Pro	Ser	Ala	Arg	Gly	Glu	Tyr	Glu	Ile	Thr	Asp	Leu
	195					200						205			
Asn	Lys	Leu	Tyr	Leu	Asp	Glu	Gly	Thr	Leu	Lys	Val	Glu	Leu	Phe	Gly
	210				215						220				
Arg	Gly	Phe	Ala	Trp	Leu	Asp	Thr	Gly	Asn	Cys	Asn	Ser	Leu	Leu	Glu
225				230					235					240	
Ala	Ser	Asn	Phe	Val	Ala	Thr	Ile	Gln	Asn	Arg	Gln	Gly	Phe	Tyr	Val
			245					250					255		
Ser	Cys	Ile	Glu	Glu	Ile	Ala	Trp	Arg	Asn	Gly	Trp	Ile	Ser	Ser	Ala
		260					265					270			
Gln	Leu	Lys	Ala	Leu	Gly	Glu	Lys	Leu	Glu	Lys	Thr	Glu	Tyr	Gly	Lys
	275					280						285			
Tyr	Leu	Ile	Asp	Leu	Ala	Asn									
	290					295									

&lt;210&gt; 7824

&lt;211&gt; 395

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7824

Lys	Ile	His	Cys	Ile	Leu	Ile	Met	Asn	Glu	Ile	Lys	Lys	Lys	Gln	Ile
1				5					10					15	

Ala Ile Leu Gly Ser Thr Gly Ser Ile Gly Thr Gln Ala Leu Gln Val  
 20 25 30  
 Ile Glu Glu His Pro Glu Leu Tyr Glu Val Tyr Ala Leu Thr Ala Asn  
 35 40 45  
 Asn Lys Val Asp Leu Leu Ile Ala Gln Ala Arg Lys Phe Met Pro Glu  
 50 55 60  
 Ala Val Val Ile Ala Asn Glu Glu Lys Tyr Ala Gln Leu Lys Glu Ala  
 65 70 75 80  
 Leu Ser Asp Leu Pro Val Lys Val Tyr Ala Gly Ala Ala Ala Leu Cys  
 85 90 95  
 Gln Ile Val Glu Ser Gly Pro Ile Asp Val Val Leu Thr Ala Met Val  
 100 105 110  
 Gly Tyr Ala Gly Leu Lys Pro Thr Met Asn Ala Ile Arg Ala Gly Lys  
 115 120 125  
 Ala Ile Ala Leu Ala Asn Lys Glu Thr Leu Val Val Ala Gly Glu Leu  
 130 135 140  
 Ile Asn Gln Leu Ala Arg Gln Tyr Arg Thr Pro Ile Leu Pro Val Asp  
 145 150 155 160  
 Ser Glu His Ser Ala Val Phe Gln Cys Leu Thr Gly Glu Val Gly Asn  
 165 170 175  
 Pro Ile Glu Lys Val Ile Leu Thr Ala Ser Gly Gly Pro Phe Arg Thr  
 180 185 190  
 Cys Thr Met Glu Gln Leu Lys Thr Val Thr Lys Val Gln Ala Leu Lys  
 195 200 205  
 His Pro Asn Trp Glu Met Gly Ala Lys Ile Thr Ile Asp Ser Ala Ser  
 210 215 220  
 Met Met Asn Lys Gly Phe Glu Val Ile Glu Ala Lys Trp Leu Phe Gly  
 225 230 235 240  
 Val Gln Pro Gly Gln Ile Glu Val Val Val His Pro Gln Ser Val Ile  
 245 250 255  
 His Ser Met Val Gln Phe Glu Asp Gly Ala Ile Lys Ala Gln Leu Gly  
 260 265 270  
 Met Pro Asp Met Arg Leu Pro Ile Gln Tyr Ala Phe Ser Tyr Pro Asp  
 275 280 285  
 Arg Ile Asn Ser Ser Phe Asp Arg Leu Asp Phe Ser Lys Cys Thr Asn  
 290 295 300  
 Leu Thr Phe Glu Gln Pro Asp Thr Lys Arg Phe Arg Asn Leu Ala Leu  
 305 310 315 320  
 Ala Tyr Glu Ser Met Tyr Arg Gly Gly Asn Met Pro Cys Ile Val Asn  
 325 330 335  
 Ala Ala Asn Glu Val Val Val Ala Ala Phe Leu Arg Asp Glu Ile Ser  
 340 345 350  
 Phe Leu Gly Met Ser Asp Val Ile Glu His Thr Met Gly Gln Val Ser  
 355 360 365  
 Phe Val Gln Thr Pro Thr Tyr Asp Glu Tyr Val Ala Thr Asp Ala Glu  
 370 375 380  
 Ala Arg Arg Ile Ala Arg Glu Leu Ile Cys Lys  
 385 390 395

&lt;210&gt; 7825

&lt;211&gt; 292

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7825

Asn Glu Ser Cys Gly Ile His Phe Cys Ser Val Arg Asp Ala Leu Leu  
 1 5 10 15  
 Leu His Gln Ile Gln Lys Gln Gly Asn Tyr Arg His Lys Met Lys Lys  
 20 25 30

Ile Glu Cys Ile Ile Met Asp Trp Ala Gly Thr Ala Val Asp Tyr Gly  
           35                  40                  45  
 Cys Phe Ala Pro Val Ala Ala Phe Ile Lys Ala Phe Ala Gly Lys Gly  
           50                  55                  60  
 Leu Thr Ile Asp Val Glu Gln Thr Arg Lys Pro Met Gly Leu Pro Lys  
   65                  70                  75                  80  
 Ile Gln His Ile Arg Glu Leu Leu Thr Met Pro Glu Val Asn Glu Gln  
                   85                  90                  95  
 Phe Ile Asn Arg Tyr Arg Arg Ala Trp Thr Glu Glu Asp Val Val Glu  
                  100                 105                 110  
 Leu Asn His Leu Phe Glu Lys Tyr Leu Phe Ala Ser Leu Lys Glu Tyr  
                  115                 120                 125  
 Thr Asp Pro Ile Pro Gly Val Ile Pro Thr Leu Glu Lys Leu Arg Ala  
   130                 135                 140  
 Glu Gly Leu Lys Ile Gly Ser Thr Thr Gly Tyr Thr Arg Glu Met Met  
   145                 150                 155                 160  
 Asp Val Val Leu Pro Glu Ala Gln Ala Lys Gly Tyr Arg Val Asp Tyr  
                  165                 170                 175  
 Cys Ala Thr Pro Asn Leu Leu Pro Ala Gly Arg Pro Ala Pro Tyr Met  
                  180                 185                 190  
 Ile Phe Glu Asn Leu Thr Lys Leu Ala Val Pro Asp Pro Asp Thr Val  
   195                 200                 205  
 Val Lys Val Gly Asp Thr Ile Val Asp Ile Gln Glu Gly Val His Ala  
   210                 215                 220  
 Lys Val Trp Ser Val Gly Val Val Leu Gly Ser Asn Glu Met Ala Leu  
   225                 230                 235                 240  
 Thr Glu Glu Glu Thr His Ala Leu Pro Ala Ala Glu Leu Glu Asn Arg  
                  245                 250                 255  
 Ile Ala Glu Val Lys Gln Arg Met Leu Ala Ala Gly Ala Ser Tyr Val  
                  260                 265                 270  
 Ile Arg Ser Ile Glu Glu Leu Pro Ala Leu Ile Gln Leu Ile Asn Ser  
   275                 280                 285  
 Lys Leu Asn His  
   290

<210> 7826  
 <211> 108  
 <212> PRT  
 <213> B.fragilis

<400> 7826  
 Ser Glu Val Arg Phe Phe Ile Ser Arg Met Asp Ser Ser Gly Glu Ser  
   1                  5                  10                  15  
 Trp Asp Thr Cys Phe Phe Val Asn Tyr Lys Arg Gly Leu Thr Arg Pro  
                  20                 25                 30  
 Lys Thr Glu Leu Asp Ser Met Ser Lys Arg Lys Leu Ala Thr Gln Phe  
                  35                 40                 45  
 Glu Glu Glu Pro Phe Ser Tyr Val Phe Gly Cys Arg Thr Phe Val Ile  
   50                 55                 60  
 Glu Ile Pro Asp Ser Lys Ile Ile Met Ala Glu Asn Ser Lys Gln Phe  
   65                 70                 75                 80  
 Leu Leu Thr Lys Met Ser Phe Leu Ser Ile Tyr Ser Asp Tyr Leu Lys  
                  85                 90                 95  
 Ile Ile Pro Tyr Phe Cys Thr Lys Leu Leu Val Ile  
                  100                 105

<210> 7827  
 <211> 95  
 <212> PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7827

Lys Arg Asn Arg Met Lys Lys Leu Val Phe Cys Ala Ala Phe Val Ala  
 1 5 10 15  
 Ala Met Cys Met Ala Gly Thr Thr Thr Ala Gln Ala Gln Asp Val Lys  
 20 25 30  
 Lys Lys Glu Val Lys Lys Glu Gln Cys Asp Lys Lys Asp Ser Lys Ala  
 35 40 45  
 Cys Cys Lys Lys Glu Lys Lys Ala Cys Cys Lys Lys Glu Ala Asp Lys  
 50 55 60  
 Lys Thr Thr Asp Gly Cys Lys His Lys Ala Asp Cys Lys Ala Lys Ala  
 65 70 75 80  
 Gly Cys Lys Asp Ser Lys Cys Thr Lys Asp Lys Gly Gly Lys Lys  
 85 90 95

&lt;210&gt; 7828

&lt;211&gt; 562

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7828

Ile Asn Lys Arg Arg Asn His His Arg Leu His Lys Tyr Gln Trp Phe  
 1 5 10 15  
 Ile Gly Arg Thr Ile Asn Asp Asn Ile Gly Ser Arg Ser Val Lys Ser  
 20 25 30  
 Val Val Lys Thr Thr Phe His Ser Leu Pro Ile Lys Phe Gln Cys Val  
 35 40 45  
 Lys Lys Leu Ile Tyr His Tyr Leu Pro Gln Pro Lys Lys Ser Asp Phe  
 50 55 60  
 Val Tyr Phe Cys Ser Thr Ser Ile Lys Lys Phe Phe Met Ile Leu His  
 65 70 75 80  
 Thr Gln Thr Pro Val Val Asp Glu Thr Asp Gly Leu Pro Leu Pro His  
 85 90 95  
 Arg Ile Trp Ala Val Val Gly Ile Ser Phe Ala Leu Cys Met Ser Val  
 100 105 110  
 Leu Asp Ile Asn Ile Ile Asn Val Val Leu Pro Thr Leu Ser His Asp  
 115 120 125  
 Phe Gly Thr Ser Pro Ala Val Thr Thr Trp Ile Ile Asn Gly Tyr Gln  
 130 135 140  
 Leu Ala Ile Val Ile Ser Leu Leu Ser Phe Ser Ser Leu Gly Glu Ile  
 145 150 155 160  
 Tyr Gly Tyr Arg Lys Ile Phe Leu Ser Gly Ile Ala Met Phe Ile Val  
 165 170 175  
 Thr Ser Leu Ile Cys Ala Leu Ser His Ser Phe Trp Thr Leu Thr Ile  
 180 185 190  
 Ala Arg Ile Phe Gln Gly Phe Ser Ala Ser Ala Ile Thr Ser Val Asn  
 195 200 205  
 Thr Ala Gln Leu Arg Thr Ile Tyr Pro Arg Lys Gln Ile Gly Arg Gly  
 210 215 220  
 Met Gly Ile Asn Ala Met Val Val Ala Ile Ser Ala Ala Ala Gly Pro  
 225 230 235 240  
 Ser Val Ala Ser Gly Ile Leu Phe Val Ala Ser Trp His Trp Leu Phe  
 245 250 255  
 Ala Ile Asn Val Pro Leu Gly Leu Val Ala Leu Thr Leu Gly Leu Lys  
 260 265 270  
 Tyr Leu Pro Arg Lys Glu Glu Arg Ser Asn Arg Lys Phe Asp Lys Leu  
 275 280 285  
 Ser Ala Ile Ala Asn Ala Ile Thr Phe Gly Leu Leu Ile Tyr Thr Leu

290 295 300  
 Asp Gly Phe Ala His His Glu Asn Asn Asp Tyr Ile Val Ile Gln Leu  
 305 310 315 320  
 Ala Val Leu Ala Val Val Gly Thr Tyr Tyr Val Arg Arg Gln Leu Asn  
 325 330 335  
 Gln Pro Ser Pro Leu Leu Pro Leu Asp Leu Leu Gly Ile Pro Ile Phe  
 340 345 350  
 Arg Leu Ser Ile Leu Thr Ser Ile Cys Ser Phe Thr Ala Gln Met Leu  
 355 360 365  
 Ala Met Val Ser Leu Pro Phe Phe Leu Gln Asn Ser Leu Gly Tyr Ser  
 370 375 380  
 Glu Val Met Thr Gly Leu Leu Leu Thr Pro Trp Pro Tyr Ser His Thr  
 385 390 395 400  
 Gly Asp Ser Thr Gly Ser Arg Ile Ser Gly Gly Thr His Ser Ser Arg  
 405 410 415  
 His Thr Gly Gln His Arg Asp Gly Ile Val Leu Tyr Arg Thr Leu Leu  
 420 425 430  
 Ser Val Tyr Ile Asn Gly Gly Phe Ile Gly His Arg His His Pro Ala  
 435 440 445  
 Ile Asp Ala Leu Trp Cys Arg Phe Arg Ser Phe Pro Asp Thr Glu Gln  
 450 455 460  
 Gln Tyr Asn His Leu Phe Arg Pro Tyr Pro Thr Phe Gly Arg Ser Gln  
 465 470 475 480  
 Arg Asn Val Gly Tyr Gly Thr Ala Leu Gly Thr Asp Ile Arg Tyr Asp  
 485 490 495  
 Thr Gly Cys Phe Ala Leu Gln Phe Cys Ser Thr Arg Glu Glu Tyr Gly  
 500 505 510  
 Gly Leu Ser Asp Ser Arg Gln Arg Ile Cys Val Cys Arg Ser Ser Gly  
 515 520 525  
 Lys Gln His Ala Ala Phe Thr Thr Leu His Ile Lys Asp Glu Ala Pro  
 530 535 540  
 Ile Thr Ile Ser Ile His Val Tyr Arg Pro Thr Gly Ser Gln Ser Asn  
 545 550 555 560  
 Thr Lys

<210> 7829  
 <211> 237  
 <212> PRT  
 <213> B.fragilis

<400> 7829  
 Thr Ser Val Ser Met Lys Trp Glu Ser Ser Leu Val Glu His Leu Gln  
 1 5 10 15  
 Trp Ser Asp Thr Ile Thr Asn Arg Glu Ser Lys Glu Gln Leu Ala Arg  
 20 25 30  
 Met Ile Ala Met Arg Val Gln Glu Gly Glu Ile Ile Gly Ala Gly Ser  
 35 40 45  
 Gly Ser Thr Val Tyr Leu Ala Leu Leu Ala Ile Ala Glu Arg Ile Arg  
 50 55 60  
 Thr Glu Asn Leu His Val Thr Val Ile Pro Ala Ser Met Glu Ile Ser  
 65 70 75 80  
 Met Glu Cys Val Arg Leu Gly Ile Pro Gln Thr Thr Leu Trp Met Cys  
 85 90 95  
 Arg Pro Asp Trp Thr Phe Asp Gly Ala Asp Glu Val Asp Pro Asp His  
 100 105 110  
 Asn Leu Ile Lys Gly Arg Gly Gly Ala Leu Phe Lys Glu Lys Leu Leu  
 115 120 125  
 Ile Cys Ser Ser Asn Arg Thr Phe Ile Leu Val Asp Glu Ser Lys Gln



130		135		140
Val Ser Phe Leu Gly	Ser Arg Phe Pro Val	Pro Ile Glu Val Phe Pro		
145	150	155	160	
Met Ala Leu Pro Tyr	Val Glu Arg Glu Val	Leu Thr Met Gly Ala Leu		
	165	170	175	
Arg Thr Glu Leu Arg	Leu Ala Lys Gly Lys	Asp Gly Pro Val Ile Thr		
	180	185	190	
Glu Asn Gly Asn Leu	Ile Leu Asp Ala Trp	Phe Gly Asn Ile His Ser		
	195	200	205	
Ser Leu Glu Lys Glu	Ile Lys Ser Ile Thr	Gly Val Val Glu Asn Gly		
	210	215	220	
Leu Phe Met Gly Tyr	Asp Val Glu Val Met	Val Ala Lys		
225	230	235		

&lt;210&gt; 7830

&lt;211&gt; 701

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7830

Gly Met Asn Arg	Met Lys Cys Gly	Phe Tyr Thr Tyr	Arg Gly Ile Ala
1	5	10	15
Phe Cys Phe Val	Ala Ala Met Phe	Cys Gly Gln Thr	Met Ala Gln Val
	20	25	30
Val Glu Lys Arg	Gly Phe Asp Ser	Gln Lys Lys Ile	Asn Ala Phe Asp
	35	40	45
Asn Thr Thr Phe	Cys Thr Ala Tyr	Leu Ser Asp Gly	Ala Leu Tyr Thr
	50	55	60
Met Arg Asp Ile	Ala Ile Asn Asp	Val Arg Lys Ile	Glu Arg Ile Val
	65	70	75
Phe Asn Pro Thr	Gly Ser Ser Ile	Ala Leu Leu Arg	Ala Lys Asn Pro
	85	90	95
Ile Ser Ile Tyr	Ser Phe Arg Asp	Arg Asn Lys Lys	Leu Phe Glu Leu
	100	105	110
Lys Glu Lys Arg	Lys Lys Leu Lys	Ala Lys Pro Met	Pro Val Ser Met
	115	120	125
Cys Tyr Ser Ala	Asp Ala Arg Ser	Phe Ile Val Gly	Asn Ser Leu Gly
	130	135	140
Glu Ile Val Ile	Tyr Asp Thr Lys	Glu Tyr Met Pro	Leu Ala Tyr Ile
	145	150	155
Gln Gly Glu Ala	Pro Ala Thr Ala	Leu Ala Met Ser	Ser Asn Asn Tyr
	165	170	175
Phe Ile Ala Ala	Ala Ala Gly Gln	Asn Ile Asn Ile	Trp Asn Phe Gln
	180	185	190
Thr Lys Glu Leu	Arg Lys Ala Ile	Pro Met Pro Ala	Val Val Lys Glu
	195	200	205
Val Thr Phe Ser	Pro Asp Ala Ala	Leu Leu Ala Val	Thr Thr Asp Asp
	210	215	220
Asn His Leu Thr	Ile Ile Asp Thr	Lys Asn Trp Asp	Lys Val Asp Ile
	225	230	235
Phe Asp Lys Leu	Gly Gly Thr Leu	Ser Ser Pro Ser	Phe His Pro Glu
	245	250	255
Gly Lys Tyr Ile	Ser Val Val Lys	Asp Gly Lys Asn	Ile Glu Ile Ile
	260	265	270
Asn Leu Lys Asn	Gly Val Val Glu	Gln Asp Ile Val	Asp Pro Ile Gly
	275	280	285
Asp Val Thr Gly	Gly Arg Phe Phe	Lys Asn Asn Gln	Asn Ser Glu Val
	290	295	300
Phe Leu Leu Thr	Asn Arg Thr Lys	Gln Met Val Phe	Trp Asp Ala Asn

305 310 315 320  
 Gly Leu Asn Pro Phe Tyr Gly Lys Ile Met Gly Arg Glu Val Asp Ala  
 325 330 335  
 Lys Met Asn Glu Trp Val Lys Met Met Gln Gly Glu Ser Met Glu Asp  
 340 345 350  
 Tyr Ala Ile Arg Val Asn Asp Glu Thr Arg Ile Lys Gln Gln Gln Leu  
 355 360 365  
 Phe Ala Gln Glu Val Ala Thr Ala Leu Ala Gly Asp Arg Ile Ser Met  
 370 375 380  
 Asp Asn Pro Phe Ile Asp Gly Tyr Asp Ala Ser Asn Asn Met Leu Asn  
 385 390 395 400  
 Ile Gly Phe Lys Gly Leu Pro Ser Ile Gly Leu Glu Val Pro Ser Asn  
 405 410 415  
 Glu Ala Gly Asp Phe Lys Asp Gly Lys Met Lys Phe Ser Asn Ala Val  
 420 425 430  
 Tyr Val Leu Asn Asp Lys Asp Glu Phe Glu Leu Ala Tyr Val Glu Val  
 435 440 445  
 Thr Asn Glu Thr Thr Asn Lys Val Tyr Ile Tyr Asp Asn Ile Gly Arg  
 450 455 460  
 Thr Lys Leu Thr Ala Leu Glu Ala Asp Glu Asn Phe Val Pro Leu Glu  
 465 470 475 480  
 Ile Met Gln Gln Ala Thr Arg Glu Glu Ala Gln Leu Ala Glu Ile Lys  
 485 490 495  
 Glu Gln Val Ile Glu Glu Lys Lys Gln Asp Lys Leu Ile Thr Asp Asn  
 500 505 510  
 Thr Gln Ile Asn Val Lys Thr Glu Val Ile Pro Gly Val Asp Ala Asn  
 515 520 525  
 Gly Lys Lys Ile Leu Asn Tyr Lys Val Gly Tyr Gln Tyr Glu Val Ile  
 530 535 540  
 Asn Lys Glu Phe Ser Ala Lys Glu Asp Phe Pro Ser Gly Gly Tyr Asn  
 545 550 555 560  
 Ile Glu Arg Ser Asn Ala Ala Met Ser Leu Met Lys Ile Ile Lys Asn  
 565 570 575  
 Ala Phe Glu Gly Asp Phe Ala Lys Tyr Leu Ser Glu Gly Lys Gln Val  
 580 585 590  
 Lys Val Ile Ile Thr Gly Ser Ala Asp Ala Ala Pro Ile Arg Gly Arg  
 595 600 605  
 Leu Ala Tyr Asp Gly Arg Tyr Gly Glu Phe Val Asp Glu Pro Tyr Tyr  
 610 615 620  
 Lys Asp Gly Asn Leu Asp Asn Ile Thr Val Thr Lys Ala Gly Gly Ile  
 625 630 635 640  
 Thr Gln Asn Glu Gln Leu Ala Leu Met Arg Ala Ala Gly Val Lys Thr  
 645 650 655  
 Tyr Ile Glu Lys Asn Val Thr Thr Leu Gly Asn Thr Lys Asn Glu Tyr  
 660 665 670  
 Glu Tyr His Val Glu Val Ala Lys Glu Arg Gly Gly Glu Phe Arg Lys  
 675 680 685  
 Ile Asn Val Glu Phe Val Ile Met Asp Ala Phe Gln Gln  
 690 695 700

&lt;210&gt; 7831

&lt;211&gt; 138

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7831

Ser Lys Leu Arg Met Arg Asn Lys Arg Tyr Ile Val Ser Phe Leu Leu  
 1 5 10 15  
 Phe Ile Ser Met Ile Met Leu Val Val Pro Val Ile Pro His His His

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<210> 7832
<211> 99
<212> PRT
<213> B.fragilis
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<210> 7833
<211> 373
<212> PRT
<213> B.fragilis
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<400> 7833																
Cys	Thr	Lys	Arg	Met	Lys	Phe	Gln	Ile	Ser	Gly	Phe	Lys	Val	Ser	Arg	
1				5					10					15		
Phe	Trp	Phe	Ile	Tyr	Phe	Val	Val	Arg	Leu	Phe	Tyr	Leu	Leu	Phe	Ser	
			20					25					30			
Val	Leu	Val	Phe	Pro	Thr	Leu	Thr	Thr	Phe	Gly	Asp	Pro	Ile	His	Tyr	
		35					40					45				
Met	Thr	Ser	Gly	Ile	Pro	Phe	Pro	Phe	Thr	Ser	Ser	Thr	Asp	Leu	Met	
	50					55					60					
Arg	Phe	Leu	Gly	Gly	Ile	Leu	Gly	Ser	Val	Leu	Gly	Gly	Phe	Asn	Val	
65					70					75					80	
Val	Ser	Asn	Phe	Pro	Phe	Met	Leu	Leu	Ser	Phe	Gly	Leu	Ile	Lys	Trp	
				85					90					95		
Ala	Val	Asp	Ile	Leu	Asp	Ile	Arg	Asn	Leu	Ile	Asp	Asp	Lys	Ile	Leu	
			100					105					110			
Leu	Ile	Ile	Leu	Ser	Leu	Pro	Thr	Phe	Cys	Ile	Trp	Thr	Ser	Val	Cys	
		115					120					125				

Ser Lys Glu Cys Ile Gly Leu Phe Phe Ser Ala Ile Leu Gly Ile Leu  
 130 135 140  
 Ile Val His Tyr Leu Asn Gly Asn Phe Lys Ile His Phe Arg Asp Tyr  
 145 150 155 160  
 Val Ala Phe Ser Leu Cys Leu Phe Phe Lys Pro Gln Tyr Leu Pro Phe  
 165 170 175  
 Ile Val Ser Thr Leu Phe Tyr Leu Arg Phe Ala Phe Gly Leu His Ser  
 180 185 190  
 Arg Arg Arg Leu Ile Ile Leu Ser Val Phe Tyr Val Ser Ala Ile Ile  
 195 200 205  
 Phe Val Leu Tyr Leu Ser Arg Asp Leu Ile Asp Leu Tyr Ser Leu Gly  
 210 215 220  
 Val Gln Lys Ala Phe Glu Phe Asp Ser Gln Phe Ser Asn Ser Thr Arg  
 225 230 235 240  
 Asp Thr Leu Phe Phe Val Asn Lys Tyr Asp Tyr Phe Ser Lys Ala Pro  
 245 250 255  
 Met Gly Ile Phe Ile Ala Phe Trp Gly Pro Thr Leu Thr Glu Ala Leu  
 260 265 270  
 Gln Lys Pro Phe Gln Met Ala Val Tyr Ile Glu Ser Phe Val Val Leu  
 275 280 285  
 Cys Val Phe Ile Tyr Phe Leu Lys Thr Pro Leu Lys Lys Leu Ile Val  
 290 295 300  
 Asn Gly Ile Val Asn Leu Arg Leu Ile Val Ser Tyr Ser Ile Leu Phe  
 305 310 315 320  
 Leu Gly Ile Leu Leu Val His Tyr Pro Phe Gly Val Phe Asn Ala Gly  
 325 330 335  
 Ser Ala Thr Arg Tyr Arg Thr Asn Tyr Leu Phe Leu Phe Ile Ile Leu  
 340 345 350  
 Leu Met Tyr Leu Phe Ser Tyr Tyr Arg Lys Lys Asn Asp Lys Val Asp  
 355 360 365  
 Thr Leu Phe Gly Cys  
 370

<210> 7834  
 <211> 955  
 <212> PRT  
 <213> B.fragilis

<400> 7834  
 Phe Met Lys Arg Asn Asn Lys Asn Arg Tyr Leu Tyr Ile Ala Ala Ile  
 1 5 10 15  
 Phe Ile Ala Ala Met Leu Pro Cys Ile Ala Cys Pro Gln Ser Thr Pro  
 20 25 30  
 Ile Leu Leu Pro Thr Gly Thr Val Glu Gly Arg Leu Pro Asn Gly Leu  
 35 40 45  
 His Tyr Leu Ile Leu His Asn Ala Ser Pro Ala Ser Arg Val Glu Phe  
 50 55 60  
 Arg Leu Ile Met Arg Val Gly Ser Val Gln Glu Thr Glu Gln Glu Lys  
 65 70 75 80  
 Gly Cys Ala His Phe Leu Glu His Ile Thr Phe Gly Gly Thr Arg His  
 85 90 95  
 Phe Pro Lys Arg Ser Leu Val Glu Tyr Leu Glu Ser Leu Gly Met Lys  
 100 105 110  
 Tyr Gly Gln Asp Ile Asn Ala Phe Thr Gly Phe Asp Arg Thr Ile Tyr  
 115 120 125  
 Met Phe Ala Val Pro Thr Asp Phe Ala Lys Asp Glu Ala Leu Asp Arg  
 130 135 140  
 Ser Leu Leu Ile Leu His Asp Trp Leu Asp Gly Val Thr Ile Asp Pro  
 145 150 155 160

Glu Lys Val Glu Asn Glu Lys Gly Ile Ile Leu Glu Glu Leu Arg Gly  
 165 170 175  
 Phe Asp Pro Glu Asp Asp Phe Tyr Pro Leu Lys Ile Gly Gln Gly Ile  
 180 185 190  
 Phe Ser His Arg Met Pro Leu Gly Thr Thr Asp Asp Ile Arg Lys Val  
 195 200 205  
 Thr Pro Gln Val Leu Lys Asn Tyr Tyr His Lys Trp Tyr Val Pro Ser  
 210 215 220  
 Leu Ala Thr Leu Val Ile Val Gly Asp Ile Ser Pro Leu Glu Ile Glu  
 225 230 235 240  
 Ser Lys Ile Lys Glu Arg Phe Lys Ser Leu Pro Gly Arg Pro Val Asn  
 245 250 255  
 Asp Phe Arg Asn Tyr Pro Leu Glu Tyr Thr Gln Gly Ile His Leu Ala  
 260 265 270  
 Ser Ile Arg Asp Ser Leu Gln Pro Arg Thr Lys Val Glu Leu Met Ile  
 275 280 285  
 Pro His Pro Cys Thr Val Glu Arg Thr Met Glu Asp Ala Ile Ala Lys  
 290 295 300  
 Glu Lys Gly Arg Leu Leu Val Ser Ala Ile Ser Ser Arg Phe Arg Ala  
 305 310 315 320  
 Arg Lys Leu Lys Thr Asp Val Thr Asp Gln Trp Tyr Leu Ser Asp Lys  
 325 330 335  
 Asn His Phe Val Leu Thr Val Glu Gly Glu Asn Arg Lys Glu Ile Leu  
 340 345 350  
 Thr Ser Ile Ser Thr Thr Val Ser Leu Leu Asn Asp Leu Ile Arg Asn  
 355 360 365  
 Gly Trp Gln Glu Asp Glu Leu Gln Asp Ile Lys Asn Asn Phe Cys Arg  
 370 375 380  
 Arg Met Lys Leu Ser Thr Asp Ala Pro Ser Arg Pro Ser Ser Met Trp  
 385 390 395 400  
 Cys Asp Asp Phe Ala Asp Tyr Val Ile Ser Gly Asp Arg Tyr Leu Thr  
 405 410 415  
 Asp Pro Ser Gln Gln Gln Gln Leu Lys Glu Ala Met Ser Arg Val Ser  
 420 425 430  
 Gly Gln Ser Leu Gln Thr Leu Leu Lys Glu Trp Met Ser Tyr Arg Glu  
 435 440 445  
 Glu Thr Leu Leu Val Ala Cys Ser Thr His Pro Gly Leu Gly Ala Pro  
 450 455 460  
 Leu Ser Glu Thr Glu Ile Ala Ser Ala Trp Ala Gln Gly Glu Gln Val  
 465 470 475 480  
 Glu Cys Thr Pro Phe Leu Tyr Phe Arg Pro Glu Lys Gln Glu Glu Ile  
 485 490 495  
 Asp Ile Glu Thr Pro Pro Cys Leu Ala Ala Arg Phe Pro Phe Asp Pro  
 500 505 510  
 Ala Ser Val Leu Arg Gln Thr Glu Tyr Pro Gln Asn Arg Ile Arg Glu  
 515 520 525  
 Val Glu Leu Lys Asn Gly Ile Arg Leu Val Leu Lys Pro Thr Leu Glu  
 530 535 540  
 Ala Asp Ser Thr Leu Leu Ile Thr Ser Phe Ala Pro Phe Gly Thr Ser  
 545 550 555 560  
 Ser Leu Ser Asp Glu Tyr Pro Leu Leu Glu Gly Phe Ala Gly Tyr  
 565 570 575  
 Ile Asp Met Gly Asp Ile Ala Lys Val Asp Gly Gln Val Leu Ser Asp  
 580 585 590  
 Tyr Leu Phe Arg Lys Glu Ile Ser Leu Ser Met Ala Val Glu Asn His  
 595 600 605  
 Trp His Gly Phe Ile Gly Met Ser Pro Thr Ala Asn Ala Pro Glu Leu  
 610 615 620  
 Phe Asn Leu Ile Tyr Glu Lys Ile Phe Asp Pro Glu Leu Lys Tyr Asp

165 170 175  
 180 185 190  
 195 200 205  
 210 215 220  
 225 230 235 240  
 245 250 255  
 260 265 270  
 275 280 285  
 290 295 300  
 305 310 315 320  
 325 330 335  
 340 345 350  
 355 360 365  
 370 375 380  
 385 390 395 400  
 405 410 415  
 420 425 430  
 435 440 445  
 450 455 460  
 465 470 475 480  
 485 490 495  
 500 505 510  
 515 520 525  
 530 535 540  
 545 550 555 560  
 565 570 575  
 580 585 590  
 595 600 605  
 610 615 620

625					630					635				640	
Glu	Phe	Glu	Glu	Ile	Arg	Gln	Asp	Leu	Leu	Glu	Asn	Gln	Asp	Lys	Glu
				645					650					655	
Thr	Ile	Leu	Glu	Lys	Met	Leu	Gln	Arg	Ser	Pro	Asp	Arg	Leu	Leu	Ser
			660					665					670		
Ala	Arg	Ile	Asn	Glu	Leu	Thr	Gly	Thr	Gly	Phe	Ala	Arg	Ser	Ser	Gln
		675					680					685			
Lys	Leu	Ser	Ser	Glu	Gln	Ile	Lys	Asn	Leu	Asn	Leu	Asp	Ser	Ile	Ala
	690				695					700					
Ala	Phe	Tyr	Lys	Lys	Leu	Tyr	Thr	Asn	Pro	Gln	Gly	Thr	Thr	Tyr	Val
705					710					715					720
Ile	Cys	Gly	Asn	Phe	Asn	Ala	Asp	Thr	Leu	Met	Gln	Gln	Phe	Val	Ser
			725						730					735	
Val	Phe	Gly	Arg	Ile	Pro	Val	Ser	Ser	His	Leu	Ser	Arg	Phe	Ser	Tyr
			740				745					750			
Pro	His	Phe	Asn	Phe	Pro	Val	Arg	Lys	His	Ile	Glu	Gly	Phe	Pro	Asn
		755					760					765			
Asp	Asn	Asp	Thr	Gln	Thr	Leu	Phe	Asp	Tyr	Leu	Leu	Pro	Gly	His	Tyr
	770				775						780				
Gln	Pro	Gly	Leu	Lys	Asn	Thr	Leu	Thr	Leu	Lys	Leu	Met	Arg	Asp	Leu
785					790					795					800
Ile	Arg	Asn	Arg	Leu	Ile	Ser	Val	Leu	Arg	Glu	Gln	Lys	Ser	Leu	Val
			805					810						815	
Tyr	Ser	Pro	Tyr	Ile	Ser	Leu	Met	Tyr	Glu	Gly	Ile	Pro	Gln	Gly	Ile
			820					825					830		
Phe	Tyr	Phe	Asp	Ile	Asn	Ala	Ser	Ala	Asp	Asn	Asp	Asn	Met	Pro	Gln
		835					840					845			
Ile	Glu	Gln	Leu	Leu	Lys	Glu	Ile	Leu	His	Gln	Leu	Lys	Gln	Gln	Glu
	850					855					860				
Val	Asp	Asn	Glu	Glu	Leu	Asn	Thr	Leu	Lys	Arg	Ser	Phe	Leu	Ile	Ala
865					870					875					880
Lys	Arg	Glu	Ala	Leu	Asn	Glu	Glu	Ser	Pro	Ser	Ala	Trp	Arg	Ala	Ala
			885					890						895	
Leu	Val	Gly	Leu	Leu	Lys	Asn	Gly	Glu	Thr	Ile	Ser	Asp	Phe	Asp	His
		900						905					910		
Tyr	Glu	Gln	Cys	Leu	Asp	Ser	Ile	Thr	Pro	Ala	Ile	Leu	Arg	Glu	Ala
	915						920					925			
Phe	Arg	Arg	Tyr	Leu	Asp	Thr	Glu	Asn	Tyr	Ile	Leu	Leu	Tyr	Leu	Ser
	930					935					940				
Lys	Asn	Lys	Leu	Lys	Asn	Asp	Thr	Ser	Asn	His					
945					950					955					

&lt;210&gt; 7835

&lt;211&gt; 720

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7835

Lys	Met	Lys	Ser	Ile	Ser	Ile	Thr	Thr	Tyr	Arg	Gly	Phe	Ser	Lys	Val
1				5					10					15	
Lys	Gly	Lys	Cys	Ser	Leu	Gln	Glu	Leu	Ile	Gly	Trp	Val	Arg	Ser	Arg
		20						25				30			
Gln	Tyr	Ala	Asn	Leu	Ile	Glu	Lys	Ile	Gly	Arg	Leu	Val	Ser	Glu	Gly
		35					40					45			
Lys	Thr	Lys	Glu	Ala	Glu	Asn	Val	Lys	Arg	Gln	Leu	Asp	Tyr	Phe	Thr
	50					55					60				
Val	Thr	Ala	Asn	Tyr	His	Glu	Cys	Arg	Leu	Ala	His	Ser	Ile	Ala	Ala
65					70					75					80
Tyr	Asn	Asp	Thr	Ser	Thr	Ile	Asp	Ile	Asp	Lys	Leu	Arg	Glu	Glu	Glu

				85					90					95	
Leu	Glu	Arg	Ile	Arg	Ala	Leu	Ile	Glu	Ala	Asp	Glu	Ala	Thr	Leu	Ala
			100					105					110		
Cys	Phe	Leu	Thr	Ala	Lys	Gln	His	Gly	Phe	Lys	Ile	Leu	Ala	Tyr	Leu
		115					120					125			
Thr	Asp	Leu	Glu	Ala	Glu	Ala	Trp	Arg	Asn	Ser	Phe	Phe	Lys	Thr	Ala
	130					135					140				
Thr	Ile	Thr	Tyr	Asp	Arg	Leu	Glu	Gln	Tyr	His	Ala	Gly	Ile	Tyr	Glu
145					150				155					160	
Leu	Thr	Arg	Lys	His	Tyr	Glu	Lys	Leu	Leu	Gln	Thr	Glu	Val	Asp	Thr
			165					170					175		
Ser	Gly	Lys	Asp	Leu	Ser	Arg	Gly	Val	Phe	Ala	Ser	Tyr	Asp	Pro	Lys
		180					185					190			
Ala	Phe	Tyr	Ser	Ala	Glu	Arg	Val	Ala	Arg	Ile	Pro	Glu	Arg	Thr	Leu
	195					200					205				
Thr	Ile	Glu	Ala	Pro	Glu	Pro	Ala	Gln	Arg	Gly	Arg	Lys	Lys	Lys	Lys
	210					215					220				
Glu	Pro	Glu	Thr	Gly	Gln	Thr	Gly	Asp	Ile	Ser	Ala	Tyr	Thr	Cys	Met
225					230				235					240	
Glu	Phe	Asn	Lys	Cys	Leu	Cys	Ser	Thr	Gln	Arg	Leu	Met	Lys	Tyr	Thr
			245					250					255		
Glu	Gly	Ser	Arg	Asn	Ser	Phe	Leu	Phe	Thr	Leu	Gly	Asn	Lys	Cys	Phe
		260					265					270			
Arg	Lys	Gly	Leu	Glu	Glu	Ser	Glu	Val	Lys	Arg	Leu	Ala	Ala	Glu	Arg
	275						280				285				
Leu	Gly	Asp	Gly	Gly	Gly	Met	Asp	Thr	Asp	Thr	Pro	Ile	Gly	Asn	Ala
	290					295					300				
Tyr	Thr	Tyr	Thr	Asp	Arg	Thr	Glu	Arg	Ala	Glu	Glu	Lys	Lys	Lys	Ile
305					310				315					320	
Pro	Leu	Val	Glu	Gln	Val	Ile	Asp	Tyr	Leu	Asn	Lys	Asn	Tyr	Ala	Phe
				325				330					335		
Arg	Arg	Asn	Thr	Val	Leu	Asp	Arg	Leu	Glu	Met	Cys	Asp	Leu	Ser	Gln
			340				345					350			
Thr	Glu	Glu	Lys	Ser	Phe	Tyr	Ala	Met	Arg	Asn	Lys	Asp	Phe	Asn	Ser
	355						360					365			
Ile	Phe	Leu	Asn	Ile	Ser	Arg	Gln	Gly	Ile	Ala	Tyr	Pro	Leu	Asn	Ser
	370				375				380						
Leu	Lys	Ser	Val	Ile	Asp	Ser	Asp	Tyr	Ser	Pro	Glu	Phe	Asn	Pro	Phe
385					390				395					400	
Thr	His	Tyr	Phe	Glu	Gly	Asn	Ala	Arg	Trp	Asp	Arg	Lys	Thr	Asp	His
			405					410					415		
Ile	Arg	Lys	Leu	Ala	Asp	Thr	Ile	Gln	Ala	Glu	Asp	Gln	Glu	Phe	Trp
			420				425					430			
Arg	Glu	Gly	Phe	Arg	Arg	Trp	Ile	Val	Ala	Met	Val	Ala	Ser	Ala	Leu
	435					440					445				
Arg	Pro	Gly	Lys	Ala	Asn	Gln	Glu	Ala	Leu	Val	Leu	His	Gly	Ala	Gln
	450				455				460						
Gly	Lys	Gly	Lys	Ser	Thr	Trp	Ile	Arg	His	Leu	Leu	Pro	Pro	Glu	Leu
465				470					475					480	
Ala	Glu	Tyr	Tyr	Arg	Asn	Gly	Met	Ile	Asp	Pro	Ala	Asn	Lys	Asp	Asp
			485					490					495		
Leu	Leu	Leu	Leu	Ser	Thr	Arg	Leu	Leu	Ile	Asn	Met	Glu	Glu	Phe	Glu
		500					505					510			
Gly	Val	Lys	Thr	Gly	Asp	Ile	Ala	Glu	Leu	Lys	Arg	Ile	Ile	Gly	Gln
	515					520					525				
Glu	Asn	Val	Thr	Ile	Arg	Lys	Val	Tyr	Asp	Thr	Gln	Ala	Gln	Leu	Tyr
	530				535				540						
Pro	Arg	Arg	Ala	Ser	Phe	Ile	Gly	Ser	Thr	Asn	Asn	Met	Gln	Phe	Leu
545				550				555					560		

100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290 300 310 320 330 340 350 360 370 380 390 400 410 420 430 440 450 460 470 480 490 500 510 520 530 540 550 560

Lys Asp Tyr Gly Gly Asn Arg Arg Phe Leu Val Ile Pro Val Lys Thr  
 565 570 575  
 Ile Asp Tyr Arg Thr Pro Val Asp His Lys Gly Val Tyr Ala Gln Ala  
 580 585 590  
 Val Gln Leu Ile Glu Asp Gly Phe Arg Tyr Trp Phe Glu Gly Asn Glu  
 595 600 605  
 Ile Asp Asp Ile Asn Thr Arg Asn Glu Arg His Arg Met Lys Asp Pro  
 610 615 620  
 Leu Glu Glu Asn Leu Tyr Val Tyr Phe Arg Pro Ala Gly Glu Lys Asp  
 625 630 635 640  
 Phe Glu Val Lys Trp Lys Pro Ala Ala Ala Ile Leu Ala Thr Leu Ser  
 645 650 655  
 Val Tyr Gly Arg Thr Gln Ala Asn Ala Gln Thr Gln Gln Val Leu Val  
 660 665 670  
 Gln Ile Leu Glu Arg Asp Ala Phe Gly Lys Arg Val Asn Ile His Gly  
 675 680 685  
 Ile Thr Glu Tyr Ala Val Val Glu Leu Thr Gln Gln Glu Val Ser Glu  
 690 695 700  
 Asn Phe Arg Lys Arg Asp Lys Gly Lys Glu Met Asp Glu Leu Pro Phe  
 705 710 715 720

<210> 7836

<211> 921

<212> PRT

<213> B.fragilis

<400> 7836

Thr Met Lys Arg Phe Phe Leu Leu Thr Ile Ile Leu Thr Val Val Val  
 1 5 10 15  
 Thr Gly Lys Val Gly Ala Gln Glu Ala Ala Ser Ala Ser Lys Arg Ala  
 20 25 30  
 Asn Gln Gln Tyr Val Leu Phe Glu Ser Glu Arg Asp Lys Gly Thr Asn  
 35 40 45  
 Val Thr Ala Met Tyr Asp Tyr Leu Met Asp Ser Tyr Glu Asn Phe Met  
 50 55 60  
 Lys Val Val Glu Ala Pro Asp Asn Ser Gln Tyr Ile Gly Gly Ala Lys  
 65 70 75 80  
 Asn Arg Leu Arg Ala Leu Tyr Pro Tyr Leu Leu Asn Gly Ala Val Tyr  
 85 90 95  
 Tyr Ser Glu Gln Lys Gln Pro Ser Lys Ala Leu Asp Phe Ala Ala Ala  
 100 105 110  
 Tyr Ile Asp Met Pro Gln Leu Lys Leu Phe Arg Ser Glu Leu Leu Pro  
 115 120 125  
 Lys Asp Asn Arg Tyr Ala Ser Val Val Tyr Tyr Ala Ala Val Ala Ala  
 130 135 140  
 Phe Asn Leu Glu Lys Asn Glu Lys Ala Leu Arg Tyr Phe Gln Glu Tyr  
 145 150 155 160  
 Leu Asn Thr Gly Thr Glu Ala Gln Gln Lys Asp Cys Tyr Val Tyr Met  
 165 170 175  
 Asn Met Ile Tyr Gln Lys Gln Lys Lys Tyr Ala Asp Gln Glu Arg Val  
 180 185 190  
 Leu Glu Gln Ala Ile Ala Lys Tyr Pro Val Ser Leu Asp Phe Leu Tyr  
 195 200 205  
 Asn Leu Val Asn Val His Ile Ala Thr Asn Asn Met Glu Lys Leu Ile  
 210 215 220  
 Gly Ala Ile Asp Arg Ile Leu Ala Val Asp Pro Asn Asn Asp Lys Val  
 225 230 235 240  
 Leu Pro Ile Lys Ala Arg Ile Leu Glu Arg Gln Gly Lys Asn Val Glu  
 245 250 255



Ala Leu Asp Ile Tyr Lys Arg Leu Tyr Ala Leu His Pro Glu Ser Phe  
 260 265 270  
 Glu Leu Met Thr Gly Val Ala Arg Ala Asn Phe Asn Cys Ala Thr Glu  
 275 280 285  
 Ile Val Asn Asn Gly Ala Thr Ile Ala Asn Asp Thr Glu Tyr Ala Leu  
 290 295 300  
 Val Arg Gln Arg Ala Ser Gly Tyr Leu Met Asp Ala Lys Asp Leu Phe  
 305 310 315 320  
 Leu Lys Ile Leu Gln Lys Asp Pro Ser Ser Lys Met Tyr Met Gln Gly  
 325 330 335  
 Leu Ala Gly Val Tyr Gln Tyr Met Asp Met Lys Pro Glu Tyr Glu Val  
 340 345 350  
 Leu Asn Lys Ile Val Gln Asp Gly Ala Ser Tyr Thr Ala Phe Pro Ser  
 355 360 365  
 Arg Leu Ala Ala Tyr Lys Glu Ala Leu Lys Lys Thr Glu Asn Val Ala  
 370 375 380  
 Gln Glu Gln Gln Ala Val Pro Val Pro Ile Glu Pro Ala Met Leu Val  
 385 390 395 400  
 Ile Lys Val Asp Gln Phe Thr Asp Ala Asn Asn Asn Lys Val Ile Asp  
 405 410 415  
 Ala Gly Glu Ser Phe Ala Ile Arg Phe Thr Ile Glu Asn Gln Gly Lys  
 420 425 430  
 Gly Asp Ala Tyr Asn Val Arg Leu Arg Leu Ala Glu Gln Gly Tyr  
 435 440 445  
 Asp Gln Tyr Phe Asp Gly Pro Arg Glu Leu Asp Gly Asn Ile Ala  
 450 455 460  
 Ala Gly Lys Ser Lys Glu Tyr Thr Phe Arg Tyr Ile Ala Lys Lys Glu  
 465 470 475 480  
 Leu Pro Thr Ser Leu Ala Lys Ile Asn Ile Tyr Ala Phe Glu Ala Asn  
 485 490 495  
 Gly Phe Asp Ala Asp Pro Ser Glu Leu Ile Val Asn Thr Gln Glu Tyr  
 500 505 510  
 Ala Met Pro Arg Leu Arg Val Ala Asp His Gln Phe Phe Ala Ser Glu  
 515 520 525  
 Gly Ser Ser Ile Thr Leu Gly Lys Asn Gly Lys Leu Thr Val Ala Leu  
 530 535 540  
 Gln Asn Phe Gly Thr Gln Thr Ala Arg Lys Val Lys Val Asn Phe Thr  
 545 550 555 560  
 Leu Pro Lys Asn Val Tyr Thr Thr Asp Thr Pro Glu Ile Ile Val Asp  
 565 570 575  
 Ser Ile Ala Pro Gly Asp Val Ala Ile Leu Asp Tyr Gly Phe Leu Val  
 580 585 590  
 Asn Lys Arg Phe Asp Gly Asp Ser Ile Ala Val Met Leu Ala Val Thr  
 595 600 605  
 Glu Ser Thr Arg Ser Ala Ser Leu Asn Glu Ala Tyr Lys Val Lys Val  
 610 615 620  
 Gly Glu Tyr Leu Ser Ala Ser Ala Ser Met Asn Leu Ser Gly Asn Val  
 625 630 635 640  
 Ala Ala Arg Lys Val Asn Val Lys Asp Phe Ser Leu Gly Phe Lys Ser  
 645 650 655  
 Glu Leu Met Glu Asp Val Pro Val Gly Ala Val Asn Arg His Arg Tyr  
 660 665 670  
 Ala Leu Ile Gly Asn Glu Asp Tyr Ser Met Thr Gly Ala Asn Ala  
 675 680 685  
 Glu Ile Asn Val Pro Tyr Ala Val Asn Asp Ala Val Leu Phe Arg Glu  
 690 695 700  
 Tyr Cys Val Arg Thr Phe Gly Val Pro Asp Gly Gln Ile Lys Val Val  
 705 710 715 720  
 Pro Asn Ala Thr Ala Gly Met Met His Glu Gln Leu Asp Trp Leu Val

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	725		730		735
Asn Met Ala Ser Thr Asp Pro Gln Ala Glu Leu Ile Phe Tyr Tyr Ser					
	740		745		750
Gly His Gly Asn Asn Asp Glu Ala Thr Lys Glu Pro Tyr Leu Leu Pro					
	755		760		765
Val Asp Ile Thr Gly Lys Asn Ile Arg Leu Gly Ile Ser Leu Ser Asp					
	770		775		780
Leu Tyr Lys Lys Leu Ala Thr Tyr Pro Val Lys Gly Ala Tyr Val Phe					
785		790		795	800
Leu Asp Ala Cys Phe Ser Gly Gly Tyr Lys Ser Ala Ala Pro Leu Leu					
	805		810		815
Ala Gln Lys Gly Val Arg Val Val Pro Lys Val Gly Leu Pro Gln Gly					
	820		825		830
Asn Thr Leu Ser Phe Ser Ser Ser Ser Gly Asp Gln Thr Ser Ser Val					
	835		840		845
Tyr His Glu Lys Lys Gln Gly Tyr Tyr Thr Tyr Phe Leu Ile Lys Thr					
	850		855		860
Ile Arg Asp Ala Lys Gly Asn Ile Ser Met Lys Glu Leu Phe Asp Arg					
865		870		875	880
Thr Ser Ala Ala Val Lys Arg Ala Thr Ala Leu Ile Asp Lys Ile Gln					
	885		890		895
Glu Pro Gln Cys Met Ala Ser Pro Thr Trp Ile Gly Trp Glu Asp Ile					
	900		905		910
Lys Leu Glu Thr Pro Val Val Thr Pro					
	915		920		

<210> 7837  
 <211> 700  
 <212> PRT  
 <213> B.fragilis

<400> 7837

Leu Tyr Leu Gly Lys Pro Tyr Val Gln Met Glu Asn Lys Tyr Gln Tyr					
1	5		10		15
Phe Lys Arg Asp Ile Ser Trp Leu Ser Phe Asn Tyr Arg Val Leu Leu					
	20		25		30
Glu Ala Asp Asp Asp Arg Leu Pro Leu Tyr Glu Arg Ile Asn Phe Ile					
	35		40		45
Ser Ile Tyr Ser Ser Asn Leu Glu Glu Phe Tyr Lys Ile Arg Val Ala					
	50		55		60
Asp His Lys Ala Val Ala Ser Gly Val Thr Asp Gly Thr Glu Glu Ser					
65		70		75	80
Leu Gln Ser Ala Lys Asp Leu Leu Glu Glu Ile Asn Arg Glu Val Asn					
	85		90		95
Arg Gln Leu Glu Asp Arg Ile His Ile Tyr Glu Lys Lys Ile Ile Pro					
	100		105		110
Ala Leu Arg Lys Asn His Val Val Phe Tyr Gln Ser Arg Asn Val Glu					
	115		120		125
Pro Phe His Gln Gln Phe Val Lys Asp Phe Phe Arg Glu Glu Ile Phe					
	130		135		140
Pro Tyr Leu Gln Pro Val Pro Val Ser Lys Asp Lys Val Ile Ser Phe					
145		150		155	160
Leu Arg Asp Asn Arg Leu Tyr Leu Ala Val Arg Leu Phe Leu Lys Gly					
	165		170		175
Thr Asn Lys Glu Asp Ala Asp His Leu Gln Tyr Phe Val Met Lys Leu					
	180		185		190
Pro Tyr Ser Lys Val Pro Arg Phe Ile Glu Leu Pro Lys His Gly Arg					
	195		200		205
Glu Tyr Tyr Leu Met Phe Ile Glu Asp Ile Ile Lys Ala Asn Ile Asp					

210	215	220
Val Ile Phe Pro Gly	Tyr Glu Val Asp Cys Ser Tyr Cys Ile Lys Ile	
225	230	235
Ser Arg Asp Ala Asp	Ile Met Ile Asp Asp Thr Ile Asn Ser Val Asp	240
	245	250
Leu Val Glu Gln Val	Lys Lys Lys Ile Lys Lys Arg Lys Ile Gly Ala	255
	260	265
Val Cys Arg Phe Val	Tyr Asp Arg Ala Met Pro Asp Asp Phe Leu Asn	270
	275	280
Phe Leu Val Asp Ala	Phe Arg Ile Arg His Glu Glu Leu Val Pro Gly	285
	290	295
Asp Lys His Leu Asn	Leu Glu Asp Leu Arg His Leu Pro Asn Pro Asn	300
305	310	315
His Ser Ile Pro Arg	Ile Glu Arg Pro Ile Pro Met Lys Leu Asn Arg	320
	325	330
Leu Asn Asp Lys Glu	Ser Ile Phe Ser Tyr Val Glu Lys Lys Asp Leu	335
	340	345
Leu Leu Tyr Tyr Pro	Tyr His Ser Phe Asp His Phe Ile His Phe Leu	350
	355	360
Tyr Glu Ala Val His	Asn Pro Glu Thr Arg Glu Ile Met Val Thr Gln	365
	370	375
Tyr Arg Val Ala Glu	Asn Ser Ala Val Ile Asn Thr Leu Ile Ala Ala	380
385	390	395
Ala Gln Asn Gly Lys	Val Thr Val Phe Val Glu Leu Lys Ala Arg	400
	405	410
Phe Asp Glu Glu Asn	Asn Leu Ala Thr Ala Glu Met Met Lys Ala Ala	415
	420	425
Gly Ile Asn Ile Ile	Tyr Ser Ile Pro Gly Leu Lys Val His Ala Lys	430
	435	440
Val Ala Leu Ile Arg	Arg Arg Ser Phe Asn Gly Glu Lys Ile His Ser	445
	450	455
Tyr Ala Tyr Ile Ser	Thr Gly Asn Phe Asn Glu Lys Thr Ala Thr Leu	460
465	470	475
Tyr Ala Asp Cys Gly	Leu Phe Thr Ser Asn Pro Val Ile Val His Asp	480
	485	490
Leu Thr Asn Leu Phe	Arg Thr Leu Arg Gly Lys Glu Asn Pro Arg Phe	495
	500	505
Thr Arg Leu Leu Val	Ala Arg Phe Asn Leu Ile Pro Glu Leu Asn Arg	510
	515	520
Leu Ile Asp Lys Glu	Ile Glu Leu Ala Glu Lys Gly Arg Gly Arg Arg	525
	530	535
Ile Ile Leu Lys Met	Asn Ala Leu Gln Asp Pro Ile Met Ile Asp Arg	540
545	550	555
Leu Tyr Glu Ala Ser	Gln Lys Gly Val Lys Ile Asp Leu Ile Val Arg	560
	565	570
Gly Ile Cys Cys Leu	Ile Pro Gly Gln Glu Tyr Ser Cys Asn Ile Arg	575
	580	585
Val Thr Arg Ile Val	Asp Ser Phe Leu Glu His Ala Arg Ile Trp Tyr	590
	595	600
Phe Gly Asn Ala Gly	His Pro Lys Val Tyr Met Gly Ser Pro Asp Trp	605
	610	615
Met Arg Arg Asn Leu	Tyr Arg Arg Ile Glu Ala Val Val Pro Ile Leu	620
625	630	635
Asp Asn Glu Leu Arg	Glu Glu Ile Val Asp Met Leu His Ile Gln Leu	640
	645	650
Ser Asp Asn Gln Lys	Ala Cys Phe Val Asp Asp Lys Leu Asn Asn Ile	655
	660	665
Phe Lys Phe Lys Thr	Asn Ala Ala Pro Val Arg Ala Gln Tyr Thr Phe	670
	675	680
		685

Tyr Asn Tyr Leu Lys Glu Lys Asn Glu Thr Phe Leu  
 690 695 700

<210> 7838  
 <211> 120  
 <212> PRT  
 <213> B.fragilis

<400> 7838  
 Asn Lys His Tyr Trp Thr Ser Thr Leu Tyr Ile Val Glu Phe Tyr Asn  
 1 5 10 15  
 Leu Arg Gly Gly Lys Glu Arg Ile Phe Asp Asp Met Asn Asn Gly Phe  
 20 25 30  
 Gly Trp Ser Arg Leu Pro Lys Ser Phe Met Ala Glu Asn Thr Val Phe  
 35 40 45  
 Leu Leu Leu Thr Ala Leu Ile His Asn Phe Tyr Lys Thr Ile Met Ser  
 50 55 60  
 Arg Leu Asp Thr Lys Ala Phe Gly Leu Lys Lys Thr Ser Arg Ile Lys  
 65 70 75 80  
 Ala Phe Val Phe Arg Phe Ile Ser Val Pro Ala Lys Trp Ile Met Thr  
 85 90 95  
 Ala Arg Gln Tyr Val Leu Asn Ile Tyr Thr Glu Asn Arg Ala Tyr Ala  
 100 105 110  
 Lys Pro Phe Lys Thr Glu Phe Gly  
 115 120

<210> 7839  
 <211> 377  
 <212> PRT  
 <213> B.fragilis

<400> 7839  
 Leu Pro Val Ile Ile Pro Asp Ile Leu Asn Ser Cys Pro Phe Arg Asp  
 1 5 10 15  
 Gly Ala Ala Asp Arg His Lys Leu Asn Ser Gln Asn Lys Thr Gln Met  
 20 25 30  
 Ile Arg Thr Met Ile Ala Ser Cys Leu Leu Ala Cys Ser Gly Phe Val  
 35 40 45  
 Ser Ala Gln Met Thr Gly Gly Asn Pro Glu Glu Val Lys Gln Thr Ala  
 50 55 60  
 Pro Ala Pro Leu Tyr Arg Asp Pro Val Tyr Asp Gly Val Ala Asp Pro  
 65 70 75 80  
 Val Val Val Trp Asn Lys Glu Asp Arg Ser Trp Trp Met Leu Tyr Thr  
 85 90 95  
 Gln Arg Arg Ala Asn Val Asn Ala Gly Asn Val Ala Tyr Cys Tyr Gly  
 100 105 110  
 Asn Asp Ile Gly Ile Ala Ser Ser Arg Asp His Gly Arg Thr Trp Val  
 115 120 125  
 Tyr Arg Gly Val Leu Asp Leu Asn Met Glu Arg Gly Lys Asn Thr Phe  
 130 135 140  
 Trp Ala Pro Glu Val Val Asn Phe Asn Gly Val Tyr His Leu Phe Val  
 145 150 155 160  
 Ser Tyr Ile Glu Gly Val Arg Thr Asp Trp Gly Gly His Ala Arg Met  
 165 170 175  
 Ala His Tyr Thr Ser Lys Asn Met Trp Asp Trp Lys Phe Glu Gly Phe  
 180 185 190  
 Val Lys Leu Ser Ser Asp Lys Thr Ile Asp Ala Thr Phe Phe Arg Met  
 195 200 205  
 Pro Asp Gly Lys Trp Arg Ala Trp Tyr Lys Asp Glu Thr Arg Asn Ala

210	215	220
Ala Ile Met Thr	Ala Glu Ser Asp Asp Leu Phe His Trp Thr Leu Asn	
225	230	235
Asp Thr Pro Val	Ile Asp Gln Ser Arg Gln Glu Gly Pro Lys Val Phe	240
	245	250
Arg Phe Gly Gly	Tyr Tyr Trp Met Leu Thr Asp Glu Trp His Gly Met	255
	260	265
Arg Val Tyr Arg	Ser Lys Asp Ala Thr Thr Trp Glu Lys Gln Gly Val	270
	275	280
Ile Leu Asp Lys	Pro Gly Thr Arg Pro Glu Asp Thr Pro Ser Gly Ala	285
	290	295
His Gly Asp Val	Val Val Val Gly Asp Lys Ala Tyr Val Ile Tyr Phe	300
305	310	315
Thr His Pro Gly	Arg Lys Ala His Ser Glu Glu Thr Lys Asp Glu Asp	320
	325	330
Gly Asn Ile Pro	Tyr His Leu Arg Arg Ser Ser Ala Gln Val Ala Glu	335
	340	345
Leu Leu Ile Lys	Asp Gly Gln Leu Val Ala Asp Arg Ser Pro Glu Phe	350
	355	360
Asn Phe Tyr Leu	Pro Asp Met Glu Glu	365
370	375	

&lt;210&gt; 7840

&lt;211&gt; 400

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7840

Met Lys Thr Ile	Met Lys Lys Leu Phe Ile Tyr Ala Val Gly Ile Cys
1	5
Leu Leu Pro Ala	Phe Thr Ser Cys Lys Asp Asp Arg Glu Glu Asn Lys
	20
Tyr Thr Gly Ile	Asn Lys Ile Tyr Leu Ser Ala Glu Thr Pro Val Ile
	35
Thr Glu Ser Glu	Asn Ile Pro Leu Thr Val Asn Val Asp Leu Thr Leu
	50
Thr Cys Glu Gln	Asp Leu Val Leu Asn Phe Glu Leu Pro Asp Asp Lys
65	70
Asn Gly Val Leu	Lys Leu Glu Asn Asn Pro Val Thr Ile Lys Ala Gly
	85
Lys Arg Ser Ala	Thr Phe Glu Val Val Ser Asn Gln Lys Asn Leu Leu
	100
Thr Glu Asp Thr	Tyr Phe Gln Val Gly Ile Ser Gln Phe Pro Thr Asp
	115
Asn Leu Met Leu	Asn Glu Thr Leu Gln Val Arg Val Lys Pro Asn Pro
	130
Lys Ile Pro Glu	Leu Ser Pro Gln Gln Lys Ala Leu Ile Lys Gly Tyr
145	150
Lys Thr Lys Tyr	Gly Ile Asp Leu Asn Lys Trp Leu Gly Val Leu Ser
	165
Cys His Thr Thr	Val Gln Ser Pro Ala Asp Gly Tyr Leu Gln Pro Phe
	180
Ala Ala Ala Phe	Thr Lys Glu Tyr Asp Gly Lys Thr Val Ile Thr Leu
	195
Ser Glu Gln Ala	Thr Glu Asp Met Pro Val Leu Lys Met Thr Asp Asn
	210
Pro Phe Gly Leu	Thr Glu Tyr Leu Tyr Phe Val Leu Arg Ser Glu Thr
225	230
Val Ala Asp Pro	Glu Phe Trp Thr Gln Gln Pro Glu Pro Gln Lys Leu

245 250 255  
 Met Lys Leu Leu Asn Trp Asn Lys Glu Ser Lys Glu Thr Phe Ala Val  
 260 265 270  
 Ser Leu Asp Ala Ile Arg Leu Lys Asp Ile Thr Ser Thr Ser Thr Arg  
 275 280 285  
 Leu Glu Tyr Leu Gly Pro Gly Lys Asn Tyr Tyr Gly Asp Pro Ile Thr  
 290 295 300  
 Ile Val Pro Phe Thr Tyr Gln Phe Ser Ala Leu Asp Arg Gln Asn Lys  
 305 310 315 320  
 Leu Leu Glu Ser Gly Asn Ala Glu Ile Lys Glu Ile Asn Asp Gln Gly  
 325 330 335  
 Ala Ser Ala Asp Pro Ala Tyr Tyr Leu Asn Cys Tyr Asp Leu Val Asn  
 340 345 350  
 Ser Asp Asn Tyr Asp Thr Pro Glu Asn Phe Ile Lys Ser Thr Gly Asn  
 355 360 365  
 Ile Asp Phe Ala Thr Asp Lys Met Thr Tyr Gln Phe Leu Leu Ser His  
 370 375 380  
 Val Asn Ala Gly Gly Tyr Thr Arg Ile Thr Val Val Tyr Glu Lys Lys  
 385 390 395 400

<210> 7841

<211> 417

<212> PRT

<213> B.fragilis

<400> 7841

Arg Ile Tyr Ile Ile Met Lys Lys Leu Ile Phe Met Gly Ile Leu Gly  
 1 5 10 15  
 Leu Phe Ile Leu Gly Ser Cys Asn Ser Lys Ser Gly Gly Asn His Glu  
 20 25 30  
 Gly His Asp His Gly Thr Glu Ala His Asp His Glu His Glu Gly His  
 35 40 45  
 Asp His Glu His Glu Gly Glu Asp His Glu Gly His Asp His Glu Gly  
 50 55 60  
 Asp Glu His Ser Arg Ser Ser Glu Pro Ala Thr Gly His Ser Asp Glu  
 65 70 75 80  
 Ile Ile Leu Pro Lys Ala Lys Ala Glu Ala Ala Gly Val Lys Thr Ser  
 85 90 95  
 Ile Ile Glu Pro Glu Val Phe Glu Gln Val Ile Lys Thr Ser Gly Gln  
 100 105 110  
 Val Leu Ala Ala Gln Gly Asp Glu Ser Val Ala Val Ala Thr Val Ala  
 115 120 125  
 Gly Val Val Ser Phe Arg Gly Lys Val Thr Glu Gly Met Ser Val Gly  
 130 135 140  
 Lys Gly Thr Ala Leu Val Thr Ile Ser Ser Ser Asn Ile Ala Asp Gly  
 145 150 155 160  
 Asp Pro Val Gln Arg Ala Arg Ile Ala Tyr Asp Ile Ser Arg Lys Glu  
 165 170 175  
 Tyr Glu Arg Met Gln Ala Leu Val Lys Asn Lys Ile Val Ser Asp Lys  
 180 185 190  
 Glu Phe Ala Gln Ala Glu Gln Asn Tyr Glu Asn Ala Arg Ile Ser Tyr  
 195 200 205  
 Glu Ala Leu Ala Lys Asn His Ser Ala Gly Gly Gln Ala Val Thr Ser  
 210 215 220  
 Pro Ile Ser Gly Phe Val Lys Asn Ile Leu Val Lys Glu Gly Asp Tyr  
 225 230 235 240  
 Val Thr Ile Gly Gln Pro Leu Val Ser Ile Thr Gln Asn Arg Arg Leu  
 245 250 255  
 Phe Leu Arg Ala Glu Val Ser Glu Lys Tyr Tyr Pro Ser Leu Arg Thr

	260		265		270
Ile Gly Ser Ala Asn Phe Lys Thr Pro Tyr Asp Asn Lys Val Tyr Glu					
275		280		285	
Leu Lys Glu Leu Asn Gly Arg Leu Leu Ser Phe Gly Lys Ser Ala Gly					
290		295		300	
Glu Asn Ser Phe Tyr Val Pro Val Thr Phe Glu Phe Asp Asn Lys Gly					
305		310		315	320
Asp Ile Ile Pro Gly Ser Phe Val Glu Val Tyr Leu Leu Ser Ser Pro					
	325		330		335
Met Glu Asn Val Leu Ser Leu Pro Arg Thr Ala Leu Thr Glu Glu Gln					
	340		345		350
Gly Leu Phe Phe Ala Tyr Leu Gln Leu Asp Glu Glu Gly Tyr Lys Lys					
	355		360		365
Gln Glu Val Thr Leu Gly Ala Asp Asn Gly Lys Ser Val Gln Val Leu					
	370		375		380
Ser Gly Ile Lys Ala Gly Asp Arg Val Val Thr Gln Gly Ala Tyr Gln					
385		390		395	400
Val Lys Leu Ala Ser Ala Ser Asn Ala Ile Pro Ala His Ser His Glu					
	405		410		415
His					

&lt;210&gt; 7842

&lt;211&gt; 1019

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7842

Asn Ala Asn Met Lys Ala Val Ile Ile Ser Phe Phe Ile Thr Leu Ser					
1	5		10		15
Thr Leu Thr Ser His Ala Gln Gln Arg Asp Ile Val Leu Thr Gly Thr					
	20		25		30
Val Thr Asp His Gln Asn Glu Pro Leu Pro Gly Ala Thr Ile Arg Ile					
	35		40		45
Lys Gly Thr Gln Phe Gly Thr Val Thr Asp Thr Asp Gly His Tyr Leu					
	50		55		60
Leu Arg Gly Lys Trp Lys Glu Asn Asp Leu Ile Leu Phe Ser Phe Ile					
65		70		75	80
Gly Met Lys Glu Ile Arg Val Lys Tyr Thr Gly Gln Lys Val Gln Asp					
	85		90		95
Ala Ala Met Gln Glu Asp Pro Lys Ala Leu Asp Glu Val Ile Ile Val					
	100		105		110
Ala Arg Gln Asn Ile Asn Glu Leu Asp Ile Arg Ala Lys Ser Gly Val					
	115		120		125
Val Gln Arg Val Asp Val Glu Arg Leu Asn Ser Lys Pro Met Ile Asp					
	130		135		140
Met Ser Leu Ala Leu Gln Gly Thr Val Pro Gly Leu Ile Ile Thr Asn					
145		150		155	160
Thr Gly Asp Leu Gly Ser Lys Pro Glu Ile Arg Ile Arg Gly Asn Ser					
	165		170		175
Ser Phe Arg Lys Gly Asp Met Ala Asn Glu Pro Leu Tyr Val Met Asp					
	180		185		190
Gly Lys Val Ile Ser Ser Asp Ala Phe Met Thr Leu Asn Pro Ala Asp					
	195		200		205
Ile Gln Glu Ile Lys Val Leu Lys Asp Ala Val Ala Cys Ala Leu Tyr					
	210		215		220
Gly Ile Lys Ala Ala Asn Gly Val Ile Glu Ile Thr Ser Gln Arg Gly					
225		230		235	240
Asn Pro Asp Gly Arg Leu Thr Thr Ser Tyr Ser Phe Asn Ile Gly Ile					

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$\frac{d}{dt} \left( \frac{\partial L}{\partial \dot{x}} \right) = \frac{\partial L}{\partial x}$



Leu Asn Leu Tyr Arg Arg Glu Thr Ser Asp Ala Leu Leu Asp Val Pro  
 725 730 735  
 Ile Pro Leu Ser Asn Gly Phe Asn Thr Met Lys Arg Asn Ile Gly Val  
 740 745 750  
 Leu Arg Asn Glu Gly Tyr Glu Leu Thr Ala Ala Leu Lys Val Leu Asp  
 755 760 765  
 Thr Pro Asp Trp Arg Val Ser Leu Arg Gly Ser Leu Ala Tyr Asn Arg  
 770 775 780  
 Asn Lys Val Ile Ser Leu Tyr Tyr Thr Asp Arg Leu Tyr Thr Ser Glu  
 785 790 795 800  
 Thr Ala Leu Thr Pro Asp Tyr Glu Val Gly Lys Ala Tyr Asn Met Leu  
 805 810 815  
 Tyr Gly Leu Lys Ser Leu Gly Ile Asn Pro Ile Thr Gly Leu Pro Val  
 820 825 830  
 Phe Gln Gly Ala Asp Gly Ser Glu Ile Pro Pro Thr Gln Asn Pro Ala  
 835 840 845  
 Arg Glu Asn Phe Ile Val Leu Gly His Ser Thr Pro Pro Tyr Ser Gly  
 850 855 860  
 Thr Phe Asn Leu Asn Phe Ser Tyr Arg Asn Phe Asp Leu Asp Met Asp  
 865 870 875 880  
 Phe Tyr Tyr Val Phe Gly Gly Ile Lys Pro Tyr Asn Tyr Ser Tyr Val  
 885 890 895  
 Arg Ser Ala Asp Ser Ala Asn Lys Asn Ala Ile Gln Lys Gln Leu Glu  
 900 905 910  
 Asn Met Trp Phe His Arg Gly Asp Glu Gly Lys Ile Tyr His Ser Pro  
 915 920 925  
 Phe Tyr Ile Ser Pro Ala Asn Ala Ser Leu Gln Gln Pro Asn Thr Glu  
 930 935 940  
 Thr Val Gly Lys Ser Asp Tyr Leu Lys Leu Ala Met Leu Ser Leu Arg  
 945 950 955 960  
 Tyr Arg Val Pro His Thr Phe Leu Glu Lys Asn Cys His Phe Ile Lys  
 965 970 975  
 Tyr Ala Asn Ile Ala Phe Gln Ala Ser Asn Leu Phe Met Ile Thr Pro  
 980 985 990  
 Tyr Lys Glu Ser Asp Pro Glu Thr Gly Ser Leu Ala Gly Ala Met Gln  
 995 1000 1005  
 Pro Val Leu Thr Ile Asn Leu Ser Leu Thr Phe  
 1010 1015

&lt;210&gt; 7843

&lt;211&gt; 166

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7843

Ile Val Asn Ile Ser Met Asn Ser Leu Asp Ser Gln Ile Thr Ala Leu  
 1 5 10 15  
 Tyr Thr Leu Ala His Glu Leu Leu Tyr Leu Gly Ser Asp Gly Ser Pro  
 20 25 30  
 Ile Tyr Ser Asp His Phe Ser Arg Leu Asn Gly Asp Val Leu Ser Arg  
 35 40 45  
 Ala Asn Thr Leu Tyr Pro His His Gly Ser Thr Asp Glu Glu Glu Ala  
 50 55 60  
 Arg Leu Cys Leu Ser Leu Leu Met Gly Tyr Asn Ala Thr Ile Tyr Asn  
 65 70 75 80  
 Asn Gly Asp Lys Glu Val Arg Ile Gln Gln Ile Leu Asn Arg Cys Trp  
 85 90 95  
 Glu Val Leu Asp Arg Leu Pro Ala Ser Leu Leu Lys Val Arg Leu Leu  
 100 105 110

Thr Tyr Cys Tyr Gly Glu Val Phe Asp Asp Asp Leu Ser Arg Glu Ala  
 115 120 125  
 His Ser Ile Ile Asp Ser Trp Gly Glu Arg Ala Leu Ser Gly Asp Glu  
 130 135 140  
 Cys Glu Ile Ala Glu Gln Leu Arg Ser Leu Glu Glu Asn Pro Tyr Pro  
 145 150 155 160  
 Asn Trp Glu Val Glu Glu  
 165

<210> 7844  
 <211> 105  
 <212> PRT  
 <213> B.fragilis

<400> 7844  
 Lys Lys Asn Ile Met Lys Leu Lys Glu Ile Ser Lys Asp Ile Tyr Asp  
 1 5 10 15  
 Val Asp Ala Trp Leu Asp Glu Glu Leu Gly Lys Glu Gly Thr Pro Glu  
 20 25 30  
 Arg Glu Ala Ser Ile Glu Lys Ala Trp Glu Glu Tyr Asn Gly Gln Ile  
 35 40 45  
 Leu Leu Asp Ala Arg Lys Asn Ala Arg Leu Thr Gln Glu Glu Leu Ala  
 50 55 60  
 Asn Arg Ile Gly Ala Asp Lys Ser Tyr Ile Ser Lys Ile Glu Arg Gly  
 65 70 75 80  
 Leu Ile Thr Pro Thr Val Ser Thr Leu Tyr Arg Ile Ala Ala Ala Met  
 85 90 95  
 Gly Leu Ser Val Glu Leu Arg Pro Leu  
 100 105

<210> 7845  
 <211> 179  
 <212> PRT  
 <213> B.fragilis

<400> 7845  
 Asn Thr Asp Met Asn Ile Phe Gly Thr Tyr Ala Tyr Ala Tyr Phe Lys  
 1 5 10 15  
 Tyr Leu Leu Leu Lys Asp Met Asp Val Leu Ile Ser Phe Phe Arg Lys  
 20 25 30  
 Lys Gly Ile Cys Ile Gly Glu Asn Cys Phe Ile Tyr Ser Ala Ile Cys  
 35 40 45  
 Thr Pro Glu Pro Tyr Leu Ile Ile Ile Lys Asn Asn Val Thr Ile Ser  
 50 55 60  
 Val Gly Val Gln Leu Ile Thr His Asp Asn Ser Val Cys Lys Val Leu  
 65 70 75 80  
 Pro Asn Arg Thr Asp Ala Phe Gly Arg Ile Val Ile Gly Asn Asn Ser  
 85 90 95  
 Phe Ile Gly Ala Gly Ser Ile Ile Leu Pro Gly Val Thr Ile Gly Asp  
 100 105 110  
 Asn Cys Ile Val Ala Ala Gly Ser Ile Val Thr Lys Ser Leu Gly Asp  
 115 120 125  
 Asn Val Val Ile Gly Gly Asn Pro Ala Lys Ile Ile Ser Thr Ile Asp  
 130 135 140  
 Glu Tyr Lys Asp Lys Ile Ser Asp Lys Ser Phe Asn Val Asn Gly Met  
 145 150 155 160  
 Thr Phe Val Gln Lys Arg Asn His Ile Leu Ser Ser Leu Asp Lys Leu  
 165 170 175  
 Ile Gln Lys

<210> 7846  
 <211> 547  
 <212> PRT  
 <213> B.fragilis

<400> 7846

Arg	Ser	Asp	Met	Ile	Ser	Val	Asp	Gly	Leu	Ala	Val	Glu	Phe	Gly	Gly
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Thr	Thr	Leu	Phe	Ser	Asp	Ile	Ser	Phe	Val	Ile	Asn	Glu	Lys	Asp	Arg
			20					25					30		
Ile	Ala	Leu	Met	Gly	Lys	Asn	Gly	Ala	Gly	Lys	Ser	Thr	Leu	Leu	Lys
	35						40					45			
Ile	Leu	Ala	Gly	Val	Arg	Gln	Pro	Thr	Arg	Gly	Arg	Ile	Ser	Ala	Pro
	50					55					60				
Lys	Glu	Cys	Val	Ile	Ala	Tyr	Leu	Pro	Gln	His	Leu	Met	Thr	Glu	Asp
65					70					75				80	
Gly	Arg	Thr	Val	Phe	Glu	Glu	Thr	Ala	Gln	Ala	Phe	Ala	His	Leu	His
				85					90					95	
Glu	Met	Glu	Ala	Glu	Ile	Glu	Arg	Met	Asn	Lys	Glu	Leu	Glu	Thr	Arg
			100					105					110		
Thr	Asp	Tyr	Glu	Ser	Asp	Ser	Tyr	Met	Glu	Leu	Ile	Glu	Asn	Val	Ser
	115						120					125			
Thr	Leu	Ser	Glu	Lys	Phe	Tyr	Ala	Ile	Asp	Ala	Thr	Asn	Tyr	Glu	Glu
	130						135					140			
Asp	Val	Glu	Lys	Ala	Leu	Leu	Gly	Leu	Gly	Phe	Met	Arg	Glu	Asp	Phe
145					150					155				160	
His	Arg	Gln	Thr	Ser	Asp	Phe	Ser	Gly	Gly	Trp	Arg	Met	Arg	Ile	Glu
				165					170					175	
Leu	Ala	Lys	Leu	Leu	Leu	Gln	Lys	Pro	Asp	Val	Leu	Leu	Leu	Asp	Glu
			180					185					190		
Pro	Thr	Asn	His	Leu	Asp	Ile	Glu	Ser	Ile	Gln	Trp	Leu	Glu	Asp	Phe
	195						200					205			
Leu	Ile	Asn	Asn	Gly	Lys	Ala	Val	Ile	Val	Ile	Ser	His	Asp	Arg	Lys
	210					215					220				
Phe	Val	Asp	Asn	Ile	Thr	Thr	Arg	Thr	Ile	Glu	Val	Thr	Met	Gly	Arg
225					230					235				240	
Ile	Tyr	Asp	Tyr	Lys	Val	Asn	Tyr	Ser	Lys	Tyr	Leu	Glu	Leu	Arg	Lys
				245					250					255	
Glu	Arg	Arg	Glu	Gln	Gln	Gln	Lys	Ala	Tyr	Glu	Glu	Gln	Gln	Lys	Phe
			260					265					270		
Ile	Ala	Glu	Thr	Lys	Asp	Phe	Ile	Glu	Arg	Phe	Lys	Gly	Thr	Tyr	Ser
	275						280					285			
Lys	Thr	Leu	Gln	Val	Gln	Ser	Arg	Val	Lys	Met	Leu	Glu	Lys	Leu	Glu
	290					295					300				
Ile	Leu	Glu	Val	Asp	Glu	Glu	Asp	Thr	Ser	Ala	Leu	Arg	Leu	Lys	Phe
305					310					315				320	
Pro	Pro	Ser	Pro	Arg	Ser	Gly	Asn	Tyr	Pro	Val	Ile	Met	Asp	Gly	Val
				325				330						335	
Gly	Lys	Ser	Tyr	Gly	Asp	Lys	Val	Val	Phe	Arg	Asn	Ala	Thr	Leu	Thr
			340					345					350		
Val	Glu	Arg	Gly	Asp	Lys	Val	Ala	Phe	Val	Gly	Lys	Asn	Gly	Glu	Gly
	355						360					365			
Lys	Ser	Thr	Leu	Val	Lys	Cys	Ile	Met	Asn	Glu	Ile	Glu	His	Asp	Gly
	370					375					380				
Thr	Leu	Thr	Leu	Gly	His	Asn	Val	Gln	Ile	Gly	Tyr	Phe	Ala	Gln	Asn
385					390					395				400	
Gln	Ala	Ser	Leu	Leu	Asp	Glu	Asn	Leu	Thr	Val	Phe	Gln	Thr	Ile	Asp

405 410 415  
 Asp Val Ala Lys Gly Glu Ile Arg Asn Lys Ile Arg Asp Leu Leu Gly  
 420 425 430  
 Ala Phe Met Phe Gly Gly Pro Glu Glu Ser Met Lys Lys Val Lys Val  
 435 440 445  
 Leu Ser Gly Gly Glu Arg Thr Arg Leu Ala Met Ile Lys Leu Leu Leu  
 450 455 460  
 Glu Pro Val Asn Leu Leu Ile Leu Asp Glu Pro Thr Asn His Leu Asp  
 465 470 475 480  
 Leu Lys Thr Lys Asp Ile Leu Lys Gln Ala Leu Lys Asp Phe Asp Gly  
 485 490 495  
 Thr Leu Ile Val Val Ser His Asp Arg Asp Phe Leu Asp Gly Leu Val  
 500 505 510  
 Thr Lys Val Tyr Glu Phe Gly Asn Gln Lys Val Thr Glu His Leu Cys  
 515 520 525  
 Gly Ile Tyr Glu Phe Leu Asp Lys Lys Lys Met Asp Ser Leu Arg Glu  
 530 535 540  
 Leu Glu Lys  
 545

<210> 7847

<211> 473

<212> PRT

<213> B.fragilis

<400> 7847

His Tyr Cys Ile Ile His Ile Gly His Lys Gln Asn Ile His Arg Thr  
 1 5 10 15  
 Lys Arg Thr Arg Asn Gln Gln Asp Arg Tyr His Arg Leu Ser Trp Cys  
 20 25 30  
 Glu Thr His Cys Gln Glu Leu Met Met Asn Met Val Leu Val Arg Phe  
 35 40 45  
 Glu Arg Ala Leu Ala Thr Ala Asn Thr Asn His His His Thr Asp His  
 50 55 60  
 Ile Glu Cys Arg Asp Asn Gln Arg Thr Glu Ser Asn His Glu Ser Thr  
 65 70 75 80  
 Phe Gly Ile Arg Gly Asp Ile Gln Ile Val Leu Ala Val Phe Asp Gly  
 85 90 95  
 Lys Glu Arg Glu His Ile Ala Gln Ser Gln Ala Ala Arg Ile Thr His  
 100 105 110  
 Lys Asn Leu Thr Gly Thr Phe Arg Thr Ala Glu Asp Val Ile Val Lys  
 115 120 125  
 Glu Arg Asp Gln His Thr Glu Arg Gly Lys Gly Glu His Ala Val Arg  
 130 135 140  
 Pro Lys Phe Phe Leu His Glu Gln Glu Ala Glu Asp Lys Gln Gly Asn  
 145 150 155 160  
 Ala Ala Gln Thr Gly Gly Lys Thr Val Asp Thr Val Asn Gln Ile Asp  
 165 170 175  
 Gly Ile Gly Asp Lys Asp Asn Gln Lys Asn Arg Lys Arg His Thr Tyr  
 180 185 190  
 Pro Gly Arg Lys Gly Ile Gln Ala Glu Lys Thr Val Glu Val Ile Asp  
 195 200 205  
 Pro Lys Ala Gly Gln Gly Lys Lys Arg Ser Thr Asp Asp Leu Asp His  
 210 215 220  
 Lys Phe Leu Thr Val Ala His Ser Asp Lys Val Ile Gly Asn Thr Arg  
 225 230 235 240  
 Gln Val Glu Gln Ser His Pro Ala Asp Gln Lys Gln Ala Leu Gly Gln  
 245 250 255  
 Gln Val His Arg Thr Glu Gly Gly Asn Ile Ile Thr His Gln Asp Ala

260 265 270  
 Lys Gly Glu His Ala Thr Gly Gly Lys Gln Asp Gly Gly Glu Glu Arg  
 275 280 285  
 Asp Thr Ala Gln Thr Gly Asn Gly Thr Phe Met Asn Leu Ala Leu Thr  
 290 295 300  
 Arg His Ile Glu Lys Leu Leu Pro Gln Arg Asp Lys Gln Asp Ala Gly  
 305 310 315 320  
 Asn Asp Lys Pro Gly Asn Arg Ser Arg Asp Asp Lys Ser Gln Tyr Asp  
 325 330 335  
 Glu Lys Asp Ile Gln Asp Lys Gly Asp Leu Gly Tyr Ile Gln Cys Cys  
 340 345 350  
 Val Glu Lys Glu Lys Ser Leu Leu Leu Tyr Phe Pro Val Gly Ile Arg  
 355 360 365  
 Ile Leu Phe Lys Thr Ala Glu Leu Phe Gly Asn Leu Thr Phe Ile Ala  
 370 375 380  
 Gly Lys Gly Thr Leu Ser Pro Ala Val Asp Asp Ala Met Arg Leu Thr  
 385 390 395 400  
 Gly Glu Val Val Val Lys Asp Phe Thr Ile Ala Ile Ser Gln Lys Ala  
 405 410 415  
 His Leu Gln Gln Gly Ser Gly Gln Ala Val Glu His Phe Pro Thr Thr  
 420 425 430  
 Val Gln Asp Leu Leu Asp Ala Asp Phe Leu Val Thr Val Ile Val Asp  
 435 440 445  
 Arg Arg Val Ile Thr His Gln Lys Arg Lys Ala Gln Thr Gly Phe Phe  
 450 455 460  
 Leu Val Gly Gly Ala Met Met Gly Ile  
 465 470

<210> 7848  
 <211> 189  
 <212> PRT  
 <213> B.fragilis

<400> 7848  
 Ser Ile Gly Ile Cys Phe Pro Phe Ala Arg Lys Val Cys Pro Asn Ile  
 1 5 10 15  
 Val Thr Phe Ala Glu Ile Asn Lys Glu Ser Met Thr Lys Val Gly Leu  
 20 25 30  
 Leu Ser Asp Thr His Ser Trp Trp Asp Glu Lys Tyr Leu Gln Tyr Phe  
 35 40 45  
 Glu Thr Cys Asp Glu Ile Trp His Ala Gly Asp Ile Gly Ser Val Glu  
 50 55 60  
 Val Ala Gln Lys Leu Ala Ala Phe Arg Pro Phe Arg Ala Val Tyr Gly  
 65 70 75 80  
 Asn Ile Asp Gly Gln Glu Ile Arg Arg Met Phe Pro Gln Val Asn Arg  
 85 90 95  
 Phe Thr Val Asp Gly Ala Glu Val Leu Met Lys His Ile Gly Gly Tyr  
 100 105 110  
 Pro Gly Asn Tyr Asp Pro Ser Ile Lys Gly Ser Leu Leu Val His Pro  
 115 120 125  
 Pro Lys Leu Phe Ile Ser Gly His Ser His Ile Leu Lys Val Lys Tyr  
 130 135 140  
 Asp Lys Thr Leu Asp Met Leu His Ile Asn Pro Gly Ala Ala Gly Met  
 145 150 155 160  
 Ser Gly Phe His Lys Val Arg Thr Met Val Arg Phe Ala Ile Asp Asn  
 165 170 175  
 Gly Val Phe Lys Asp Leu Glu Val Ile Glu Leu Ala Gly  
 180 185

<210> 7849  
 <211> 165  
 <212> PRT  
 <213> B.fragilis

<400> 7849

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Leu Leu Thr Ile Lys Asn Tyr Gln Thr Met Ala Val Pro Tyr Lys Lys
1      5      10      15
Ile Ala Arg Lys Asp Pro Arg Lys Thr Asp Ala Ile Glu Lys Phe Tyr
      20      25      30
Pro Gln Leu Val Thr Leu Gly Gln Ser Ala Ser Leu Glu Ser Ile Ala
      35      40      45
Tyr Glu Met Lys Glu Lys Ser Ser Leu Ser Ser Gly Asp Ile Lys Ser
      50      55      60
Val Leu Thr Asn Phe Val Glu Ala Met Arg Thr Ser Leu Tyr Asn Gly
65      70      75      80
Gln Ser Val Asn Ile Arg Asp Phe Gly Val Phe Ser Leu Ser Ala Arg
      85      90      95
Thr Lys Gly Val Asp Thr Glu Lys Glu Cys Thr Ala Lys Asn Ile Met
      100      105      110
Ala Val Lys Ile Asn Phe Arg Pro Ser Ser Ser Val Arg Pro Asn Leu
      115      120      125
Thr Ser Thr Arg Ala Gly Asp Lys Ile Glu Phe Ile Asp Ile Lys Ala
      130      135      140
Ala Leu Glu Gly Lys Glu Ser Glu Lys Gly Gly Asp Gly Asp Ile Val
145      150      155      160
Asp Asp Pro Thr Ala
      165
  
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<210> 7850  
 <211> 208  
 <212> PRT  
 <213> B.fragilis

<400> 7850

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Phe Asn Tyr Met Gln Tyr Asn Thr Gln Gln Lys Arg Met Pro Leu Pro
1      5      10      15
Glu Tyr Gly Arg Ser Ile Gln Asn Met Val Asp Phe Ala Leu Thr Ile
      20      25      30
Gln Asp Arg Ser Glu Arg Gln Arg Cys Ala Asn Thr Ile Ile Asn Ile
      35      40      45
Met Gly Asn Met Phe Pro His Leu Arg Asp Val Pro Asp Phe Lys His
      50      55      60
Lys Leu Trp Asp His Leu Ala Ile Met Ala Asp Phe Lys Leu Asp Ile
65      70      75      80
Asp Tyr Pro Tyr Glu Ile Ile Arg Lys Asp Asn Leu Val Thr Lys Pro
      85      90      95
Asp Pro Ile Pro Tyr Pro Ser Thr Lys Ile Arg Tyr Arg His Tyr Gly
      100      105      110
Arg Thr Leu Glu Ile Leu Ile Lys Lys Ala Cys Glu Phe Gln Glu Gly
      115      120      125
Asp Glu Lys Lys Asn Leu Val Ala Leu Ile Cys Asn His Met Lys Lys
      130      135      140
Asp Tyr Met Ala Trp Asn Lys Asp Thr Val Asp Asp Arg Lys Ile Ala
145      150      155      160
Glu Asp Leu Ala Glu Phe Ser Gly Gly Lys Leu Gln Met Asp Asp Glu
      165      170      175
Ile Leu Arg Leu Met Ser Glu Arg Ile Ala Gln Asn Tyr Arg Pro Arg
      180      185      190
  
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Thr Asn Asn Asn Asn Asn Gln Arg Asn Asn Asn Gln Arg Arg Lys Phe  
 195 200 205

<210> 7851  
 <211> 290  
 <212> PRT  
 <213> B.fragilis

<400> 7851

Tyr Ser Ile Ile Met Pro Lys Lys Lys Arg Ser Lys Ala Phe Trp Asn  
 1 5 10 15  
 Asn Ile Lys Phe Lys Tyr Lys Leu Thr Ile Ile Asn Glu Asn Thr Leu  
 20 25 30  
 Glu Glu Val Val Gly Leu His Val Ser Lys Leu Asn Gly Leu Ser Val  
 35 40 45  
 Leu Leu Ser Val Leu Thr Val Leu Phe Leu Phe Ala Ala Ala Ile Ile  
 50 55 60  
 Thr Phe Thr Pro Leu Arg Asn Tyr Leu Pro Gly Tyr Met Asn Ser Asp  
 65 70 75 80  
 Ile Arg Ala Gln Val Val Glu Asn Ala Leu Arg Val Asp Ser Leu Gln  
 85 90 95  
 Gln Leu Val Asp Arg Gln Asn Met Tyr Ile Met Asn Ile Gln Asp Ile  
 100 105 110  
 Phe Ser Gly Thr Val Arg Val Asp Thr Val Gln Ser Met Asp Ser Leu  
 115 120 125  
 Thr Thr Met Arg Glu Asp Ser Leu Ile Ala Arg Ser Glu Arg Glu Glu  
 130 135 140  
 Ala Phe Arg Arg Gln Tyr Glu Glu Thr Glu Lys Tyr Asn Leu Thr Ser  
 145 150 155 160  
 Ile Thr Ala Gln Pro Asp Val Asn Gly Leu Ile Phe Tyr Arg Pro Thr  
 165 170 175  
 Arg Gly Met Ile Ser Asp His Phe Asp Ala Glu Lys Lys His Phe Gly  
 180 185 190  
 Thr Asp Ile Ala Ala Asn Pro Asn Glu Ser Val Leu Ala Thr Leu Asp  
 195 200 205  
 Gly Thr Val Ile Leu Ser Thr Tyr Thr Ala Glu Thr Gly Tyr Leu Ile  
 210 215 220  
 Glu Val Gln His Asn Gln Asp Phe Val Ser Val Tyr Lys His Cys Gly  
 225 230 235 240  
 Ser Leu Leu Lys Arg Glu Gly Asp Thr Val Lys Gly Gly Glu Ala Ile  
 245 250 255  
 Ala Leu Val Gly Asn Ser Gly Thr Leu Thr Thr Gly Pro His Leu His  
 260 265 270  
 Phe Glu Leu Trp His Arg Gly Arg Pro Val Asn Pro Glu Lys Tyr Ile  
 275 280 285  
 Val Phe  
 290

<210> 7852  
 <211> 185  
 <212> PRT  
 <213> B.fragilis

<400> 7852

Thr Lys Ile Met Ser Gln Leu Asn Asp Ile Ser Leu Val Ala Gln Val  
 1 5 10 15  
 Val Val Phe Arg Asn Thr Arg Ala Phe Asp Gln Leu Val Gln Lys Tyr  
 20 25 30  
 Gln Ser Pro Val Arg Arg Phe Phe Leu Asn Leu Thr Cys Gly Asp Ser

[illegible]

<400> 7853

Ile	Tyr	Lys	Ile	Val	Met	Lys	Ile	Tyr	Leu	Val	Cys	Gln	Thr	Trp	Ser
1				5					10					15	
Asn	Thr	Lys	Asn	Asn	His	Ala	Gly	Ile	Leu	Tyr	Leu	Cys	Asn	Gln	Leu
			20					25					30		
Ala	Ala	Ile	Asn	Pro	Asp	Ile	Gln	Val	Ile	Ala	Met	Pro	Glu	Phe	Lys
		35					40					45			
Ser	Ile	Gly	Arg	Phe	Phe	Leu	Tyr	His	Ile	Trp	His	Leu	Tyr	Tyr	Ala
	50					55					60				
Phe	Tyr	Leu	Tyr	Leu	Ser	Thr	Lys	Asp	Gly	Asp	Cys	Val	Ile	Leu	Met
65					70					75					80
Glu	Tyr	Leu	Leu	Ser	Lys	Ser	Leu	Asp	Gln	Ser	Leu	Ile	Ala	Ser	Phe
				85					90					95	
Leu	Lys	Arg	Thr	Lys	Pro	Asn	Val	Arg	Ile	Ile	Ala	Leu	Pro	His	Leu
			100					105					110		
Val	Ser	Lys	Leu	Ile	Lys	Lys	His	Phe	Ser	Glu	Lys	Glu	Ile	Val	Asp
		115					120					125			
Arg	Ile	Ser	Lys	Val	Asp	Ser	Val	Trp	Val	Leu	Gly	Ser	Ser	Leu	Lys
	130					135					140				
Thr	Phe	Leu	Cys	Ser	Leu	Gly	Val	Pro	Asn	Asp	Lys	Ile	Arg	Val	Ile
145					150					155					160
Phe	His	Tyr	Val	Asp	Thr	Glu	Tyr	Tyr	Lys	Gly	Glu	Val	Cys	Lys	Val
				165					170					175	
Pro	Asn	Phe	Arg	Leu	Arg	Val	Val	Val	Met	Gly	Asn	Met	Gln	Arg	Asp
			180					185					190		
Tyr	Asp	Leu	Leu	Phe	Glu	Val	Ile	Ser	Ala	Leu	Pro	Leu	Ile	Asp	Phe
		195					200					205			
Asp	Val	Cys	Ala	Gly	Val	Ser	Lys	Ala	Thr	Glu	Asn	Leu	Thr	Ser	Leu
	210					215					220				
Lys	Asn	Val	Thr	Leu	His	Ser	Tyr	Met	Ser	Glu	Asp	Thr	Leu	Arg	Gly
225					230					235					240
Ile	Met	Asn	Lys	Ala	Asp	Val	Ser	Leu	Asn	Ile	Met	Lys	Asp	Thr	Ile
				245					250					255	
Gly	Ser	Asn	Val	Ile	Val	Thr	Ser	Met	Ala	Met	Gly	Leu	Ala	Met	Val



	260		265		270										
Val	Ser	Asp	Val	Gly	Ser	Ile	Arg	Asp	Tyr	Val	Asp	Glu	Ser	Asn	Gly
	275				280							285			
Leu	Phe	Cys	Leu	Thr	Ser	Lys	Asp	Phe	Ile	Ile	Ala	Leu	Ser	Arg	Leu
	290					295					300				
Glu	Ala	Asp	Arg	Asp	Met	Val	Lys	Arg	Met	Gln	Leu	Lys	Ser	Val	Ser
305					310					315					320
Lys	Ala	Gln	Gly	Met	Asn	Val	Ser	Glu	Phe	Tyr	Arg	Trp	Phe	Arg	Thr
			325						330					335	
Met	Val	Tyr	Glu	Ser											
	340														

<210> 7854  
 <211> 301  
 <212> PRT  
 <213> B.fragilis

	<400> 7854														
Lys	Lys	Lys	Met	Glu	Glu	Val	Lys	Arg	Asn	Ser	Leu	Gln	Ala	Trp	Ile
1			5						10					15	
Leu	Ala	Ala	Arg	Pro	Lys	Thr	Leu	Ala	Gly	Ala	Ile	Thr	Pro	Val	Met
			20						25				30		
Ile	Gly	Cys	Ala	Leu	Ala	Phe	Ala	Asp	Gly	Lys	Phe	Asn	Trp	Ile	Pro
		35				40						45			
Ala	Leu	Ile	Cys	Cys	Leu	Phe	Ala	Gly	Leu	Met	Gln	Val	Ala	Ala	Asn
	50					55					60				
Phe	Ile	Asn	Asp	Leu	Phe	Asp	Phe	Leu	Lys	Gly	Thr	Asp	Arg	Glu	Asp
65				70						75					80
Arg	Leu	Gly	Pro	Glu	Arg	Ala	Cys	Ala	Gln	Gly	Trp	Ile	Ser	Ala	Ala
				85					90					95	
Ala	Met	Lys	Gln	Gly	Ile	Phe	Ile	Thr	Val	Gly	Leu	Ala	Cys	Leu	Ile
			100					105					110		
Gly	Cys	Thr	Leu	Leu	Phe	Tyr	Ala	Gly	Trp	Glu	Leu	Ile	Leu	Ile	Gly
		115					120					125			
Ala	Leu	Cys	Val	Leu	Phe	Ala	Phe	Leu	Tyr	Thr	Thr	Gly	Pro	Tyr	Pro
	130					135					140				
Leu	Ser	Tyr	Lys	Gly	Trp	Gly	Asp	Val	Leu	Val	Ile	Val	Phe	Phe	Gly
145				150						155					160
Phe	Val	Pro	Val	Gly	Thr	Tyr	Tyr	Val	Gln	Ala	Leu	Asn	Trp	Thr	
			165					170					175		
Pro	Asn	Val	Thr	Val	Ala	Ser	Leu	Val	Cys	Gly	Leu	Ile	Val	Asp	Thr
		180						185					190		
Leu	Leu	Val	Val	Asn	Asn	Tyr	Arg	Asp	Arg	Asp	Ala	Asp	Arg	Lys	Ser
		195					200					205			
Gly	Lys	Lys	Thr	Val	Val	Val	Arg	Phe	Gly	Glu	Ser	Phe	Gly	Arg	Tyr
	210					215					220				
Phe	Tyr	Leu	Leu	Leu	Gly	Ile	Thr	Ala	Ala	Trp	Leu	Cys	Phe	Trp	Phe
225					230					235					240
Leu	Phe	Asn	Gly	His	Leu	Tyr	Ala	Thr	Leu	Leu	Pro	Gln	Leu	Tyr	Leu
			245						250					255	
Phe	Phe	His	Ile	Arg	Thr	Trp	Lys	Lys	Met	Val	Gln	Ile	His	Ser	Gly
		260					265					270			
Lys	Lys	Leu	Asn	Ser	Ile	Leu	Gly	Glu	Thr	Ser	Arg	Asn	Met	Leu	Leu
		275					280					285			
Met	Gly	Ile	Leu	Leu	Ser	Ile	Gly	Leu	Val	Ile	Asn	Gly			
	290					295					300				

<210> 7855  
 <211> 240

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7855

Leu	Ser	Pro	Ile	Ile	Glu	Lys	Ile	Lys	Ile	Cys	Gly	His	Leu	Leu	Leu
1			5					10						15	
Asp	Lys	His	Ser	Gly	Leu	His	Thr	Met	Lys	Asn	Lys	Arg	Tyr	Ser	Arg
			20					25					30		
Gly	Glu	Glu	Leu	Ser	Asn	Thr	Leu	Ser	His	Gly	Ala	Gly	Thr	Leu	Leu
		35					40					45			
Gly	Ile	Thr	Ala	Gly	Tyr	Phe	Leu	Leu	Glu	Lys	Ala	Leu	Ala	Asn	Pro
	50					55					60				
His	Pro	Tyr	Trp	Ala	Thr	Gly	Cys	Val	Leu	Ala	Tyr	Leu	Val	Gly	Met
65					70					75					80
Leu	Ala	Ser	Tyr	Ile	Ser	Ser	Thr	Trp	Tyr	His	Gly	Ser	Arg	Pro	Gly
				85					90					95	
Lys	Arg	Lys	Glu	Leu	Leu	Arg	Lys	Phe	Asp	His	Gly	Ala	Ile	Tyr	Leu
			100					105					110		
His	Ile	Ala	Gly	Thr	Tyr	Thr	Pro	Phe	Thr	Leu	Leu	Val	Leu	Arg	His
	115						120					125			
Ala	Gly	Gly	Trp	Gly	Trp	Gly	Ile	Phe	Thr	Phe	Val	Trp	Leu	Ser	Ala
	130					135					140				
Ile	Val	Gly	Phe	Ile	Leu	Ala	Phe	Lys	Lys	Leu	Lys	Glu	His	Ser	Asn
145					150					155					160
Leu	Glu	Thr	Ile	Cys	Phe	Val	Gly	Met	Gly	Ser	Ala	Ile	Leu	Val	Ala
				165					170					175	
Leu	Lys	Pro	Leu	Met	Asp	Cys	Leu	Ser	Ala	Ile	Gly	Ala	Ser	Pro	Ala
			180					185					190		
Phe	Trp	Trp	Leu	Leu	Gly	Gly	Gly	Ala	Ser	Tyr	Ile	Met	Gly	Ala	Val
	195						200					205			
Phe	Tyr	Ser	Leu	Arg	Lys	Pro	Tyr	Met	His	Ala	Val	Phe	His	Leu	Phe
	210				215						220				
Cys	Leu	Gly	Gly	Ser	Ile	Gly	His	Ile	Ile	Ala	Ile	Trp	Leu	Ile	Leu
225					230					235					240

&lt;210&gt; 7856

&lt;211&gt; 368

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7856

Ile	Pro	Phe	Val	Leu	Asn	Ile	Leu	Phe	Ile	Ile	Leu	Ala	Phe	Val	Ile
1				5				10						15	
Ser	Ala	Ser	Val	Ala	Arg	Leu	Ile	Ile	Pro	Arg	Ile	Leu	Leu	Ile	Ser
			20					25				30			
Leu	Arg	Lys	Lys	Leu	Phe	Asp	Met	Pro	Ser	Glu	Arg	Lys	Val	His	Lys
		35					40					45			
Arg	Ala	Ile	Pro	Arg	Leu	Gly	Gly	Val	Ser	Phe	Phe	Pro	Thr	Ile	Leu
	50					55					60				
Leu	Ser	Ser	Cys	Gly	Val	Phe	Ala	Leu	Arg	Ile	Leu	Met	Gly	Tyr	Asp
65					70					75					80
Val	Pro	Ala	Leu	Arg	Ala	Val	Tyr	Leu	Leu	Pro	Glu	Cys	Leu	Phe	Leu
				85				90					95		
Val	Cys	Gly	Met	Thr	Leu	Leu	Tyr	Leu	Thr	Gly	Ile	Ala	Asp	Asp	Leu
			100					105					110		
Val	Gly	Val	Arg	Tyr	Arg	Gln	Lys	Phe	Val	Ile	Gln	Ile	Ile	Cys	Ala
		115					120					125			
Ser	Phe	Phe	Pro	Leu	Ala	Gly	Leu	Trp	Ile	Asn	Asn	Phe	Tyr	Gly	Leu
	130					135					140				

Phe Gly Leu Tyr Ala Leu Pro Ala Trp Ile Gly Met Pro Phe Thr Val  
 145 150 155 160  
 Leu Leu Val Val Phe Val Thr Asn Ala Ile Asn Leu Ile Asp Gly Ile  
 165 170 175  
 Asp Gly Leu Ala Ser Gly Leu Ser Ser Val Ala Leu Leu Val Phe Gly  
 180 185 190  
 Phe Leu Phe Met Gln Lys Glu Leu Trp Thr Tyr Ser Met Leu Ala Phe  
 195 200 205  
 Ala Thr Phe Gly Val Leu Val Pro Phe Phe Tyr Tyr Asn Val Phe Gly  
 210 215 220  
 Ser Ala Glu Arg Ala Arg Lys Ile Phe Met Gly Asp Thr Gly Ser Leu  
 225 230 235 240  
 Thr Leu Gly Tyr Val Leu Ser Phe Leu Ala Ile Lys Tyr Ser Gln Tyr  
 245 250 255  
 Asn Leu Asp Val Thr Pro Tyr Thr Glu Gly Ala Phe Val Ile Ala Phe  
 260 265 270  
 Ser Thr Leu Ile Val Pro Ala Phe Asp Val Ile Arg Val Val Met Val  
 275 280 285  
 Arg Val Arg Ser Gly Lys Ser Pro Phe Glu Pro Asp Lys Asn His Ile  
 290 295 300  
 His His Lys Phe Leu Ala Met Gly Phe Thr Pro Arg Lys Ala Met Ile  
 305 310 315 320  
 Thr Ile Leu Leu Ile Ser Cys Ala Phe Ser Ala Val Asn Ile Leu Phe  
 325 330 335  
 Met Pro Tyr Val Asn Asn Thr Ile Met Leu Ile Gly Asp Ile Thr Val  
 340 345 350  
 Trp Val Gly Leu Asn Leu Trp Trp Asp Arg Ile Arg Asp Asn Lys Cys  
 355 360 365

&lt;210&gt; 7857

&lt;211&gt; 143

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7857

Ala Asn Ile Val Trp Gln Tyr Leu Tyr Ile Gln Glu Ile Ile Gly Thr  
 1 5 10 15  
 Phe Ala Thr Glu Ile Arg Arg Arg Ala Val Met Lys Thr Val Asn Gln  
 20 25 30  
 Ile Ile Gly Glu Asn Leu Lys Lys Ile Arg Glu Leu Ser Gly Phe Thr  
 35 40 45  
 Gln Glu Gln Val Ala Gln Ser Ile Lys Ile Glu Arg Ser Thr Tyr Ser  
 50 55 60  
 Asn Tyr Glu Gly Gly Thr Arg Glu Ile Pro Tyr Thr Ile Leu Glu Asp  
 65 70 75 80  
 Ile Ser Asn Leu Phe Gly Cys Glu Pro Phe Ile Leu Phe Glu Asp Asn  
 85 90 95  
 Ile Gln Thr Asn Asn Glu Ile Met Ala Thr Ala Phe Arg Ile Ser Asn  
 100 105 110  
 Leu Gly Glu Asn Asp Leu Lys Glu Ile Ala Ala Phe Lys Asp Ile Val  
 115 120 125  
 Lys Ser Tyr Leu Lys Met Glu Arg Ile Ala Gln Asn Glu Ala Glu  
 130 135 140

&lt;210&gt; 7858

&lt;211&gt; 775

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7858

Asn	Ile	Ser	Val	Thr	Cys	Met	Thr	Phe	Leu	Cys	Asn	Thr	Lys	Ile	Arg
1				5					10					15	
Pro	Leu	Gln	Ser	Glu	Ile	Thr	Tyr	Thr	Phe	Met	Glu	Thr	Ile	Tyr	Leu
		20						25					30		
Cys	Ile	Ile	Ile	Phe	Leu	Phe	Val	Leu	Ala	Val	Phe	Asp	Leu	Met	Val
	35					40						45			
Gly	Val	Ser	Asn	Asp	Ala	Val	Asn	Phe	Leu	Asn	Ser	Ala	Val	Gly	Ala
	50					55				60					
Lys	Ala	Ala	Ser	Phe	Lys	Thr	Ile	Leu	Phe	Ile	Ala	Gly	Ala	Gly	Ile
65					70					75					80
Phe	Ile	Gly	Ala	Ser	Leu	Ser	Asn	Gly	Met	Met	Asp	Ile	Ala	Arg	His
				85				90						95	
Gly	Ile	Tyr	Gln	Pro	Glu	His	Phe	Tyr	Phe	Ala	Glu	Ile	Met	Cys	Ile
			100					105						110	
Leu	Leu	Ala	Val	Met	Leu	Thr	Asp	Val	Val	Leu	Leu	Asp	Val	Phe	Asn
		115					120					125			
Ser	Met	Gly	Met	Pro	Thr	Ser	Thr	Thr	Val	Ser	Met	Val	Phe	Glu	Leu
	130					135					140				
Leu	Gly	Gly	Thr	Phe	Ala	Leu	Ala	Leu	Ile	Lys	Val	His	Asn	Ser	Asp
145					150					155					160
Thr	Leu	Gly	Leu	Gly	Asp	Leu	Ile	Asn	Thr	Asp	Lys	Ala	Leu	Ser	Val
				165					170						175
Ile	Met	Ala	Ile	Phe	Val	Ser	Val	Ala	Ile	Ala	Phe	Phe	Phe	Gly	Met
			180					185						190	
Leu	Val	Gln	Trp	Leu	Ala	Arg	Met	Val	Phe	Thr	Phe	Asn	Tyr	Lys	Ser
		195					200					205			
Asn	Ile	Lys	Tyr	Ser	Ile	Ala	Leu	Phe	Gly	Gly	Ile	Ala	Ser	Thr	Ala
	210					215					220				
Ile	Val	Tyr	Phe	Met	Val	Ile	Lys	Gly	Leu	Lys	Asp	Ser	Ser	Phe	Met
225					230					235					240
Thr	Pro	Glu	Asn	Lys	Gln	Trp	Val	Gln	Glu	Asn	Thr	Met	Met	Leu	Val
				245					250					255	
Ser	Cys	Phe	Phe	Val	Ile	Ser	Thr	Ile	Leu	Met	Gln	Ile	Leu	His	Trp
		260						265					270		
Leu	Lys	Val	Asn	Val	Phe	Lys	Val	Val	Val	Leu	Leu	Gly	Thr	Phe	Ala
	275						280					285			
Leu	Ala	Leu	Ala	Phe	Ala	Gly	Asn	Asp	Leu	Val	Asn	Phe	Ile	Gly	Val
	290					295				300					
Pro	Leu	Ala	Gly	Tyr	Ser	Ser	Phe	Ile	Asp	Tyr	Thr	Ala	Asn	Gly	Thr
305					310					315					320
Ser	Val	Gly	Pro	Asp	Gly	Phe	Leu	Met	Thr	Ser	Leu	Met	Gly	Ser	Ala
				325					330					335	
Lys	Thr	Pro	Trp	Tyr	Phe	Leu	Ile	Gly	Ala	Gly	Ala	Val	Met	Val	Tyr
		340						345					350		
Ala	Leu	Cys	Thr	Ser	Lys	Lys	Ala	His	Ala	Val	Ile	Lys	Thr	Ser	Val
	355						360					365			
Asp	Leu	Ser	Arg	Gln	Asp	Glu	Gly	Glu	Glu	Asn	Phe	Gly	Ser	Thr	Pro
	370				375					380					
Ile	Ala	Arg	Thr	Leu	Val	Arg	Phe	Ser	Leu	Thr	Leu	Ala	Asn	Gly	Ile
385					390					395					400
Ser	Arg	Ile	Thr	Pro	Ser	Ala	Lys	Arg	Trp	Ile	Asp	Thr	Arg	Phe	
			405					410					415		
Arg	Lys	Asp	Glu	Ala	Ile	Ile	Ala	Asp	Gly	Ala	Ala	Phe	Asp	Leu	Val
		420						425				430			
Arg	Ala	Ser	Val	Asn	Leu	Val	Leu	Ala	Gly	Leu	Leu	Ile	Ala	Val	Gly
	435						440					445			
Thr	Ser	Leu	Lys	Leu	Pro	Leu	Ser	Thr	Thr	Tyr	Val	Thr	Phe	Met	Val
	450					455					460				

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Ala Met Gly Thr Ser Leu Ala Asp Arg Ala Trp Gly Arg Asp Ser Ala  
 465 470 475 480  
 Val Tyr Arg Ile Thr Gly Val Leu Ser Val Ile Gly Gly Trp Phe Ile  
 485 490 495  
 Thr Ala Gly Ala Ala Phe Thr Ile Cys Phe Phe Val Ala Met Val Ile  
 500 505 510  
 His Phe Gly Gly Ser Ile Ala Ile Ile Ala Leu Ile Gly Leu Ala Ala  
 515 520 525  
 Phe Thr Leu Ile Arg Ser Gln Leu Met Tyr Lys Lys Lys Lys Glu Lys  
 530 535 540  
 Glu Lys Gly Asn Glu Thr Leu Lys Gln Leu Met Gln Ala Thr Ser Ser  
 545 550 555 560  
 His Glu Ala Leu Glu Leu Met Arg Lys His Thr Arg Glu Glu Leu Ser  
 565 570 575  
 Lys Val Leu Glu Tyr Ala Glu Gln Asn Phe Glu Leu Thr Val Thr Ser  
 580 585 590  
 Phe Leu His Glu Asn Leu Arg Gly Leu Arg Arg Ala Met Gly Ser Thr  
 595 600 605  
 Lys Phe Glu Lys Gln Leu Ile Lys Gln Met Lys Arg Thr Gly Thr Val  
 610 615 620  
 Ala Met Cys Lys Leu Asp Asn His Thr Val Leu Glu Lys Gly Leu Tyr  
 625 630 635 640  
 Tyr Tyr Gln Gly Asn Asp Phe Ala Ser Glu Leu Val Tyr Ser Ile Ser  
 645 650 655  
 Arg Leu Cys Glu Pro Cys Leu Glu His Ile Asp Asn Asn Phe Asn Pro  
 660 665 670  
 Leu Asp Ala Ile Gln Lys Gly Glu Phe Gly Asp Val Ala Glu Asp Ile  
 675 680 685  
 Thr Tyr Leu Ile Gln Gln Cys Arg Gln Lys Leu Glu Gly Asn Asn Tyr  
 690 695 700  
 Ser Asn Leu Glu Glu Asp Leu His Arg Ala Asn Asp Leu Asn Ser Gln  
 705 710 715 720  
 Leu Ser His Leu Lys Arg Gln Glu Leu Gln Arg Ile Gln Ser Gln Thr  
 725 730 735  
 Gly Ser Ile Lys Val Ser Met Val Tyr Leu Thr Met Ile Gln Glu Ala  
 740 745 750  
 Gln Asn Val Val Thr Tyr Thr Ile Asn Leu Met Lys Val Ser Arg Lys  
 755 760 765  
 Phe Gln Ile Glu Thr Asp Ile  
 770 775

&lt;210&gt; 7859

&lt;211&gt; 297

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7859

Cys Val Asp Val Leu Met Asn Glu Leu Glu Asp Ile Tyr Lys Arg Ile  
 1 5 10 15  
 Glu Tyr Leu Arg Asn Asn Gly Val Lys Met Lys Glu Ile Ala Asp Trp  
 20 25 30  
 Ile His Met Ala Pro Ser Val Leu Ser Ala Leu Tyr Ser Ser Val Leu  
 35 40 45  
 Pro Thr Tyr Leu Asn Leu Gln Lys Thr Lys Pro Arg Glu Glu Ala Leu  
 50 55 60  
 Asp Glu Ala Leu Ala Leu Val Asn Asn Val Ser Lys Lys Arg Leu Leu  
 65 70 75 80  
 Gly Asn Leu Gly Glu Met Lys Glu Arg Leu Phe Asp Leu Glu Pro Asn  
 85 90 95

Gln Glu Ala Asn Ile Thr Gly Asn Ala Phe Leu Lys Leu Leu Glu Lys  
 100 105 110  
 Glu Met Gln Glu Ser Val Gly Glu Val Tyr Asn Tyr Ser Gly Thr Tyr  
 115 120 125  
 Leu Ser Tyr Ser Leu Ser Ser Ser Thr Asp Ser Leu Lys Ala Glu Pro  
 130 135 140  
 Tyr Leu Ile Cys Ala Ser Glu Asn Asn Asp Tyr Val Lys Val Gly Met  
 145 150 155 160  
 Ile Asn Ala Tyr Lys Ser Val His Trp Gly Ser Gly Ile Ile Ser Asn  
 165 170 175  
 His Gln Asn Ser Tyr Leu Met Phe Asn Glu Arg Glu Leu Pro Gln Phe  
 180 185 190  
 Ala Leu Val Thr Ile Tyr Leu Gln Leu Pro His Tyr Glu Phe Pro His  
 195 200 205  
 Met Leu Lys Gly Leu Tyr Leu Cys Leu Asp Tyr Asn His Asn Pro Ile  
 210 215 220  
 Ala Arg Arg Ile Val Leu Val Lys Gln Ser Asp Ser Thr Asp Ile Asp  
 225 230 235 240  
 Glu Phe Leu Lys Met Glu Gly Lys Leu Ile Ser Arg Ser Glu Leu Thr  
 245 250 255  
 Pro Glu Glu Glu Ile Tyr Tyr Asn Tyr Thr Cys Gln Glu Gly Asp Tyr  
 260 265 270  
 Ile Lys Thr Cys Thr Val Pro Ser Pro Lys Leu Asn Glu Ser Asp Leu  
 275 280 285  
 Glu Arg Glu Lys Lys Met Leu Lys Ile  
 290 295

<210> 7860  
 <211> 304  
 <212> PRT  
 <213> B.fragilis

<400> 7860  
 Asn Tyr Pro Val Phe Leu His Lys Thr Phe Gly Asn Met Ile Gln Ser  
 1 5 10 15  
 Met Thr Gly Tyr Gly Lys Ala Thr Ala Glu Leu Pro Asp Lys Lys Ile  
 20 25 30  
 Asn Val Glu Ile Lys Ser Leu Asn Ser Lys Ala Met Asp Leu Ser Ala  
 35 40 45  
 Arg Ile Ala Pro Ala Tyr Arg Glu Lys Glu Met Glu Ile Arg Asn Glu  
 50 55 60  
 Ile Ala Arg Val Leu Glu Arg Gly Lys Val Asp Phe Ser Leu Trp Val  
 65 70 75 80  
 Glu Lys Lys Glu Cys Ala Asp Ala Ala Thr Pro Ile Asn Gln Val Leu  
 85 90 95  
 Val Glu Gly Tyr Tyr Asn Gln Ile Lys Ala Ile Ser Glu Asn Leu His  
 100 105 110  
 Ile Ala Val Pro Thr Asp Trp Phe Gln Thr Leu Leu Arg Met Pro Asp  
 115 120 125  
 Val Met Thr Arg Thr Glu Thr Gln Glu Leu Ser Glu Glu Glu Trp Gly  
 130 135 140  
 Ile Val Tyr Ala Ala Val Lys Glu Ala Val Ser His Leu Val Asp Phe  
 145 150 155 160  
 Arg Lys Gln Glu Gly Ala Ala Leu Glu Lys Lys Phe Arg Glu Lys Ile  
 165 170 175  
 Ala Asn Ile His Arg Leu Leu Glu Ser Val Thr Pro Tyr Glu Lys Glu  
 180 185 190  
 Arg Val Asp Lys Val Lys Glu Arg Ile Thr Asp Ala Leu Glu Lys Thr  
 195 200 205

Leu Asn Val Asp Tyr Asp Lys Asn Arg Leu Glu Gln Glu Leu Ile Tyr  
 210 215 220  
 Tyr Ile Glu Lys Leu Asp Ile Asn Glu Glu Lys Gln Arg Leu Gly Asn  
 225 230 235 240  
 His Leu Lys Tyr Phe Ile Ser Thr Leu Glu Ser Gly Ser Gly Gln Gly  
 245 250 255  
 Lys Lys Leu Gly Phe Ile Ala Gln Glu Met Gly Arg Glu Ile Asn Thr  
 260 265 270  
 Leu Gly Ser Lys Ser Asn His Ala Glu Met Gln Lys Ile Val Val Gln  
 275 280 285  
 Met Lys Asp Glu Leu Glu Gln Ile Lys Glu Gln Val Leu Asn Val Met  
 290 295 300

<210> 7861

<211> 376

<212> PRT

<213> B.fragilis

<400> 7861

Ser Ile His Val Tyr Glu Tyr Met Lys Lys Ile Leu Phe Met Gly Asn  
 1 5 10 15  
 Thr Ala Trp Ser Met Tyr Asn Phe Arg Arg Val Val Phe Ser Asp Leu  
 20 25 30  
 Ile Ser Leu Gly Tyr Ile Ile Tyr Ile Val Ala Pro Leu Asp Val Lys  
 35 40 45  
 Phe Gln Lys Glu Leu Glu Lys Leu Gly Cys Lys Phe Ile Ser Leu Asp  
 50 55 60  
 Ile Lys Ala Lys Gly Thr Asn Pro Phe Arg Asp Phe Ile Leu Ile Phe  
 65 70 75 80  
 Gln Ile Lys Lys Ile Leu Glu Lys Val Gln Pro Asp Phe Cys Phe Phe  
 85 90 95  
 Tyr Thr Ile Lys Pro Asn Ile Tyr Gly Ser Ile Ala Ala Ser Met Leu  
 100 105 110  
 His Ile Pro His Ile Ala Ile Ile Thr Gly Leu Gly Tyr Thr Phe Ile  
 115 120 125  
 Asn His Asn Leu Ile Ser Tyr Ile Ala Lys Cys Leu Tyr Lys Ile Ala  
 130 135 140  
 Leu Val Lys Ala Lys Glu Val Trp Phe Leu Asn Lys Asp Asp Lys Glu  
 145 150 155 160  
 Thr Phe Val Ser Lys Lys Ile Val Lys Gly Thr Lys Val Gln Leu Leu  
 165 170 175  
 Pro Gly Glu Gly Ile Asp Leu Lys Arg Phe Ser Lys Lys Pro Met Val  
 180 185 190  
 Pro Asp Val Ser Phe Leu Leu Met Ala Arg Met Leu Trp Asp Lys Gly  
 195 200 205  
 Ile Gly Glu Phe Val Glu Ala Ala Lys Phe Ile Lys Gln Arg Tyr Pro  
 210 215 220  
 Asp Thr Arg Phe Cys Leu Leu Gly Phe Ile Gly Val Asp Asn Pro Thr  
 225 230 235 240  
 Ala Ile Pro Lys Glu Arg Ile Glu Glu Trp Cys Ser Met Gly Leu Val  
 245 250 255  
 Glu Tyr Leu Gly Val Thr Ser Asp Val Arg Pro Phe Ile Glu Asn Cys  
 260 265 270  
 Ser Cys Val Val Leu Pro Ser Tyr Arg Glu Gly Val Pro Val Ser Leu  
 275 280 285  
 Leu Glu Gly Ala Ala Met Gly Arg Pro Leu Ile Thr Thr Asp Ala Ala  
 290 295 300  
 Gly Cys Lys Glu Ala Val Glu Asp Thr Val Asn Gly Tyr Leu Cys Glu  
 305 310 315 320

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<210> 7864
<211> 64
<212> PRT
<213> B.fragilis
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&lt;400&gt; 7864

Ile Leu Thr Thr Ser Val Ser Phe Leu Phe Val Thr Phe Leu Tyr Met  
 1 5 10 15  
 Trp Gln Ala Lys Phe Ala Lys Leu Ser Asp Leu Thr Lys Ser Phe Leu  
 20 25 30  
 Ile Tyr Leu Trp Gly Phe Val Lys Arg Glu Leu Phe Tyr Cys Asn Phe  
 35 40 45  
 Val Leu Trp Ser Lys Gln Ile Val Tyr Ile Leu Phe Arg Tyr Gly Leu  
 50 55 60

&lt;210&gt; 7865

&lt;211&gt; 151

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7865

Gly Thr Asp Tyr Ala Pro Ser Gly Gln Phe Glu Lys Met Phe Asn Thr  
 1 5 10 15  
 Asp Leu Gly Ala Gly Val Gly Thr Gly Val Ala Gln Ile Ala Gly Gly  
 20 25 30  
 Gln Ala Asp Gly Tyr Asn Phe Phe Pro Gln Gln Asp Leu Ser Ser Pro  
 35 40 45  
 Thr Thr Lys Glu Asp Val Met Lys Lys Ser Ile His Val Ile Met Glu  
 50 55 60  
 Val Glu Phe Asp Lys Lys Val Gly Gly Ser Gly Pro Glu Thr Gly Trp  
 65 70 75 80  
 Leu Asn Val Val Ala Leu Lys Asp Asn Thr Ala Thr Asn Tyr Ile Thr  
 85 90 95  
 Asp Phe Glu Ala Gly Lys Val Tyr Phe Ile Asn Leu Ala Asp Ile Lys  
 100 105 110  
 Asp Ile Met Asp Val Pro Val Pro Pro Val Thr Pro Asp Pro Asp Pro  
 115 120 125  
 Glu Thr Val Ser Val Asp Leu Thr Val Ser Ile Gly Gln Trp Thr Val  
 130 135 140  
 Val Gln Val Lys Pro Glu Val  
 145 150

&lt;210&gt; 7866

&lt;211&gt; 206

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7866

Ile Phe Ile Lys Met Arg Ile Thr Lys Ser Ile Leu Ala Leu Met Ala  
 1 5 10 15  
 Ala Thr Met Thr Phe Ala Ala Cys Ser Asn Asp Glu Lys Ile Thr Glu  
 20 25 30  
 Ser Thr Pro Lys Thr Val Ala Leu Thr Val Lys Leu Pro Glu Phe Gly  
 35 40 45  
 Gly Ala Ser Ser Arg Ala Ile Asp Pro Glu Thr Thr Thr Gly Asn Lys  
 50 55 60  
 Val Thr Ile Asn Gly Pro Val Lys Ile Ile Ala Arg Val Ser Gln Gly  
 65 70 75 80  
 Gly Ala Ile Thr Asn Thr Ile Ser Glu Asn Ile Thr Ala Gly Ser Met  
 85 90 95  
 Ser Thr Ile Thr Val Ser Gly Ala Ala Gln Trp Ile Glu Val Glu Ala  
 100 105 110  
 Asn Gly Asp Asn Ser Thr Glu Thr Asp Asn Val Asn Thr Arg Gln Gly

115		120		125
Ser Ala Thr Ser Ser Lys Val Arg Leu Phe Gly Gly Ala Thr Ile Asn				
130		135		140
Pro Gly Ser Gly Gly Asn Ala Thr Cys Thr Pro Thr Ile Asn Pro Asp				
145		150		155
Met Ala Arg Val Glu Val Lys Gly Ser Leu Ala Gly Pro Trp Thr His				
	165		170	
Leu Asn Asp Leu Lys Ile Lys Gly Ile Tyr Ile Asn Asn Val Lys Leu				
	180		185	190
Thr Arg Gly Ala Ser Ser Leu Thr Arg Ile Val Ser Ala Ala				
195		200		205

<210> 7867  
 <211> 267  
 <212> PRT  
 <213> B.fragilis

<400> 7867

Cys Met Thr Lys Arg Thr Cys Gln Phe Pro Lys His Thr Cys Leu Arg				
1	5		10	15
Glu Ile Asn Phe Leu Lys Ile Ala Gly Ile Ser Leu Leu Leu Phe Cys				
	20		25	30
Thr Thr Ser Gln Ile Ala Val Ala Asp Ser Tyr Glu Lys Asn Ala Val				
	35		40	45
Thr Ala Thr Gln Gln Ser Lys Thr Glu Lys Ile Thr Gly Lys Ile Val				
	50		55	60
Asp Glu Ser Gly Glu Ala Ile Ile Gly Ala Ser Val Lys Val Gln Gly				
65	70		75	80
Ser Thr Ile Gly Thr Ile Thr Asn Met Glu Gly Glu Phe Met Ile Pro				
	85		90	95
Asn Val Pro Asn Lys Ala Val Leu Glu Ile Ser Tyr Ile Gly Tyr Lys				
	100		105	110
Pro Leu Glu Val Ala Val Gly Lys Ser Lys Asp Leu Arg Ile Thr Met				
	115		120	125
Glu Glu Asp Thr Lys Thr Leu Asp Glu Val Ile Val Val Gly Tyr Gly				
	130		135	140
Thr Thr Ser Lys Arg Lys Thr Thr Ala Ala Ile Ala Ser Val Asn Thr				
145	150		155	160
Glu Asp Ile Ile Lys Ala Pro Thr Ala Asn Ile Thr Gln Ser Leu Ala				
	165		170	175
Gly Arg Ala Pro Gly Leu Leu Val Thr Ser Gly Gly Gly Leu Asn				
	180		185	190
Asn Phe Ser Ser Val Ser Ile Arg Gly Gly Gly Thr Pro Leu Tyr Val				
	195		200	205
Ile Asp Asp Val Ile Ser Glu Glu Arg Asp Phe Arg Asn Leu Asn Ala				
	210		215	220
Glu Asp Ile Asp Gln Ile Thr Ile Leu Lys Asp Ala Ala Ser Thr Ala				
225	230		235	240
Val Tyr Gly Ala Arg Ala Ala Asn Gly Ile Val Met Ile Val Thr Lys				
	245		250	255
Gln Gly Gln Ser Arg Glu Asn Glu Arg Gln Leu				
	260		265	

<210> 7868  
 <211> 540  
 <212> PRT  
 <213> B.fragilis

<400> 7868

Leu Ile Gln Lys Lys Met Ala Asn Leu Asp Leu Ser Lys Tyr Gly Ile  
 1 5 10 15  
 Thr Gly Val Thr Glu Ile Leu His Asn Pro Ser Tyr Asp Val Leu Phe  
 20 25 30  
 Ala Glu Glu Thr Lys Pro Gly Leu Glu Gly Phe Glu Lys Gly Gln Val  
 35 40 45  
 Thr Glu Leu Gly Ala Val Asn Val Met Thr Gly Val Tyr Thr Gly Arg  
 50 55 60  
 Ser Pro Lys Asp Lys Phe Val Lys Asn Glu Ala Ser Glu Asn Ser  
 65 70 75 80  
 Val Trp Trp Thr Ser Glu Glu Tyr Lys Asn Asp Asn Lys Pro Cys Ser  
 85 90 95  
 Glu Glu Ala Trp Ala Asp Leu Lys Ala Lys Ala Val Lys Glu Leu Ser  
 100 105 110  
 Asn Lys Arg Leu Phe Val Val Asp Thr Phe Cys Gly Ala Asn Glu Gly  
 115 120 125  
 Thr Arg Met Lys Val Arg Phe Ile Met Glu Val Ala Trp Gln Ala His  
 130 135 140  
 Phe Val Thr Asn Met Phe Ile Arg Pro Thr Ala Glu Glu Leu Ala Asn  
 145 150 155 160  
 Tyr Gly Glu Pro Asp Phe Val Cys Phe Asn Ala Ser Lys Ala Lys Val  
 165 170 175  
 Asp Asn Tyr Lys Glu Leu Gly Leu Asn Ser Glu Thr Ala Thr Val Phe  
 180 185 190  
 Asn Leu Lys Thr Lys Glu Gln Val Ile Leu Asn Thr Trp Tyr Gly Gly  
 195 200 205  
 Glu Met Lys Lys Gly Met Phe Ser Ile Met Asn Tyr Met Asn Pro Leu  
 210 215 220  
 Arg Gly Ile Ala Ser Met His Cys Ser Ala Asn Thr Asp Met Glu Gly  
 225 230 235 240  
 Thr Ser Ser Ala Ile Phe Phe Gly Leu Ser Gly Thr Gly Lys Thr Thr  
 245 250 255  
 Leu Ser Thr Asp Pro Lys Arg Lys Leu Ile Gly Asp Asp Glu His Gly  
 260 265 270  
 Trp Asp Asn Glu Gly Val Phe Asn Tyr Glu Gly Gly Cys Tyr Ala Lys  
 275 280 285  
 Val Ile Asn Leu Asp Lys Glu Ser Glu Pro Asp Ile Phe Asn Ala Ile  
 290 295 300  
 Lys Arg Asp Ala Leu Leu Glu Asn Val Thr Val Ala Ala Asp Gly Lys  
 305 310 315 320  
 Ile Asn Phe Ala Asp Lys Ser Val Thr Glu Asn Thr Arg Val Ser Tyr  
 325 330 335  
 Pro Ile Tyr His Ile Glu Asn Ile Val Lys Pro Val Ser Lys Gly Pro  
 340 345 350  
 His Ala Lys Gln Val Ile Phe Leu Ser Ala Asp Ala Phe Gly Val Leu  
 355 360 365  
 Pro Pro Val Ser Ile Leu Asn Pro Glu Gln Ala Gln Tyr Tyr Phe Leu  
 370 375 380  
 Ser Gly Phe Thr Ala Lys Leu Ala Gly Thr Glu Arg Gly Ile Thr Glu  
 385 390 395 400  
 Pro Thr Pro Thr Phe Ser Ala Cys Phe Gly Ala Ala Phe Leu Ser Leu  
 405 410 415  
 His Pro Thr Lys Tyr Ala Glu Glu Leu Val Lys Lys Met Glu Met Thr  
 420 425 430  
 Gly Ala Lys Ala Tyr Leu Val Asn Thr Gly Trp Asn Gly Ser Gly Lys  
 435 440 445  
 Arg Ile Ser Ile Lys Asp Thr Arg Gly Ile Ile Asp Ala Ile Leu Asp  
 450 455 460  
 Gly Ser Ile Asp Lys Ala Pro Thr Lys Val Ile Pro Phe Phe Asp Phe

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465 470 475 480  
 Val Val Pro Thr Glu Leu Pro Gly Val Asp Pro Lys Ile Leu Asp Pro  
 485 490 495  
 Arg Asp Thr Tyr Ala Asp Pro Ala Gln Trp Asn Glu Lys Ala Lys Asp  
 500 505 510  
 Leu Ala Gly Arg Phe Ile Lys Asn Phe Ala Lys Phe Thr Gly Asn Glu  
 515 520 525  
 Ala Gly Lys Lys Leu Val Ala Ala Gly Pro Lys Leu  
 530 535 540

<210> 7869  
 <211> 538  
 <212> PRT  
 <213> B.fragilis

<400> 7869

Arg Gln Glu Asn Ile Met Asn Asn Lys Arg Lys Asn Met Ser Ile Tyr  
 1 5 10 15  
 Ile Thr Val Leu Leu Trp Ile Leu Ile Pro Leu Leu Ile Ile Asn Gly  
 20 25 30  
 Leu Ile Phe Leu Thr Ser Asp Met Leu Ser Val Phe Val Gly Gly Met  
 35 40 45  
 Leu Ser Leu Lys Leu Leu Cys Tyr Ser Leu Phe Phe Ser Tyr Ser Phe  
 50 55 60  
 Leu Leu Gly Tyr Lys Ala Gln Thr Gly Gly Gly Ile Ile Ile Leu Val  
 65 70 75 80  
 Leu Leu Leu Ile Leu Gly Leu Phe Leu Trp Gln Ser Phe Ile Ser Trp  
 85 90 95  
 Val Glu Pro Gly Thr Leu Trp Arg Glu Ala Val Gly Ala Ile Ile Phe  
 100 105 110  
 Leu Gly Val Ile Leu Ser Val Gly Ile Leu Cys Arg Tyr Gly Ile Lys  
 115 120 125  
 Ala Gly Gly Leu Leu Arg Leu Ser Ser Ile Leu Ala Phe Ala Ile Val  
 130 135 140  
 Ala Phe Val Tyr Ile Thr Val Cys Leu Ser Thr Val Cys Gly Ala Tyr  
 145 150 155 160  
 Ser Pro Ile Pro Glu Glu Leu Phe Trp Lys Asp Ala Tyr Pro Glu Lys  
 165 170 175  
 Gly Lys Asn Gly Thr Val Phe Phe His His Ser Lys Leu His Ile Asn  
 180 185 190  
 Pro Phe Asp Ser Arg Val Ile Gly Val Phe Arg Phe Asn Asp Lys Lys  
 195 200 205  
 Glu Tyr Val Gly Tyr Ser Ala Ser Met Tyr Glu Ser His Glu Ile Val  
 210 215 220  
 Asn Ser Gly Phe Lys Val Asp Asp Thr Ile Lys Ala Ser Thr Cys Asp  
 225 230 235 240  
 Phe Ile His Ser Ser Tyr Glu Pro Leu Leu Ser Asn Phe Met Ser Asp  
 245 250 255  
 Cys Gln Asp Ala Leu Tyr Met Lys Glu Gly Asp Tyr Cys Val Phe Leu  
 260 265 270  
 Tyr Thr Glu Lys Gly Ala Leu Tyr Arg Lys Glu Phe Asp Tyr His Arg  
 275 280 285  
 Asn Gly Ile Val Lys Gln Ala Arg Thr Tyr Thr Tyr Asp Arg Lys Thr  
 290 295 300  
 Gly Phe His Ile Glu Arg Glu Lys Thr Ile Glu Phe Asp Glu Leu Gly  
 305 310 315 320  
 Phe Cys Asp Lys Ser Gly Arg Val Arg Trp Asn Ile Lys Asp Phe His  
 325 330 335  
 Gln Thr Asp Thr Val Ile Asp Met Glu Ser Arg Tyr Gly Gln Ala Tyr

340 345 350  
 Asp Pro Ala Ala Arg Asn Arg Lys Tyr Ala Leu Pro Gln Gln Leu Ile  
 355 360 365  
 Ile Asp Ser Phe Val Thr Val Glu Ser Lys Thr Ala Ser Pro Asp Ser  
 370 375 380  
 Leu Arg Lys Tyr Ser Ser Leu Asp Phe Pro Leu Asp Glu Tyr Tyr Lys  
 385 390 395 400  
 Leu Gly Gly Val Asn Gly His Ala Ile Ser Val Tyr Val Asn Thr Asp  
 405 410 415  
 Glu Tyr Lys Trp Arg Lys Ile Tyr Leu Ser Asp Phe Thr Gln Leu Gly  
 420 425 430  
 Asn Val Glu Gln Met Tyr Ser Phe Ile Asp Ala Leu Glu Leu Ser Cys  
 435 440 445  
 Leu Asp Thr Gly Met Trp Val Arg Ile Gly Glu Gln Ser Met Val Val  
 450 455 460  
 Gly Glu Asp Asp Glu Cys Cys Ser Phe Val Leu Lys Glu Val Val Lys  
 465 470 475 480  
 Gly Gly Lys Ala Leu Ala Leu Tyr Phe Phe Asp Asp Tyr Ala Val Thr  
 485 490 495  
 Thr Asp Ser Arg Phe Cys Phe Tyr Phe Asn Pro Ser Ile His Lys Asp  
 500 505 510  
 Met Glu Ile Gln Lys Arg Ala Gly Ala Ala Trp Asn Glu Met Lys Lys  
 515 520 525  
 Ile Phe Met Glu Tyr Lys Glu Lys Glu Asn  
 530 535

<210> 7870  
 <211> 60  
 <212> PRT  
 <213> B.fragilis

<400> 7870  
 Lys Arg Ala Leu Phe Leu Lys Asp Ile Ile His Leu Leu Phe Lys Asp  
 1 5 10 15  
 Ile Ile Ile Ile Leu Ile Ser Thr Ser Arg Phe Glu Ile Lys Arg Lys  
 20 25 30  
 Asn Gln Pro Asn Asp Thr Ile Pro Gln Tyr Gly Asp Glu Ile Asn His  
 35 40 45  
 Thr Lys Asn Glu Ile Cys Val Lys Asn Gly Ile Ile  
 50 55 60

<210> 7871  
 <211> 637  
 <212> PRT  
 <213> B.fragilis

<400> 7871  
 Tyr Ser Lys Asn Thr Leu Thr Pro Val His Val Asn Pro Lys Phe Lys  
 1 5 10 15  
 Tyr Ile Asn Arg Ile Met Ala Asp Glu Met Met Val Lys Glu Leu Glu  
 20 25 30  
 Glu Val Val Val Arg Phe Ser Gly Asp Ser Gly Asp Gly Met Gln Leu  
 35 40 45  
 Ala Gly Asn Ile Phe Ser Asn Val Ser Ala Thr Val Gly Asn Asp Ile  
 50 55 60  
 Cys Thr Phe Pro Asp Tyr Pro Ala Asp Ile Arg Ala Pro Gln Gly Ser  
 65 70 75 80  
 Leu Thr Gly Val Ser Gly Phe Gln Val His Val Gly Ala Ser Lys Ile  
 85 90 95

Phe	Thr	Pro	Gly	Asp	His	Cys	His	Val	Leu	Val	Ala	Met	Asn	Pro	Ala
			100					105						110	
Ala	Leu	Lys	Thr	Gln	Ile	Lys	Phe	Cys	Lys	Pro	Gln	Gly	Leu	Val	Ile
		115					120					125			
Thr	Asp	Ser	Asp	Ser	Phe	Gly	Glu	Lys	Asp	Leu	Glu	Lys	Ala	Gln	Phe
	130					135					140				
Lys	Thr	Gly	Asn	Pro	Phe	Glu	Glu	Met	Gly	Ile	Thr	Gln	Gln	Val	Leu
145					150					155					160
Glu	Val	Pro	Ile	Ser	Ser	Met	Cys	Lys	Glu	Ser	Leu	Lys	Asp	Ser	Gly
				165					170					175	
Leu	Asp	Asn	Lys	Ala	Met	Leu	Arg	Cys	Lys	Asn	Met	Phe	Ala	Leu	Gly
			180					185					190		
Leu	Val	Cys	Trp	Leu	Phe	Asn	Arg	Asn	Leu	Ser	Ala	Ala	Glu	Lys	Met
		195					200					205			
Leu	Asn	Glu	Lys	Phe	Ala	Lys	Lys	Pro	Glu	Ile	Ala	Ala	Ala	Asn	Ile
	210					215					220				
Lys	Val	Leu	Asn	Asp	Gly	Tyr	Asn	Tyr	Gly	Ala	Asn	Thr	His	Ala	Ser
225					230					235					240
Thr	Ser	Thr	Tyr	Lys	Ile	Glu	Ser	Lys	Thr	Pro	Lys	Ala	Ala	Gly	Leu
				245					250					255	
Tyr	Thr	Asp	Ile	Asn	Gly	Asn	Lys	Ala	Thr	Ser	Tyr	Gly	Leu	Ile	Ala
			260					265					270		
Ala	Ala	Glu	Lys	Ala	Gly	Leu	Glu	Leu	Tyr	Leu	Gly	Ser	Tyr	Pro	Ile
		275					280					285			
Thr	Pro	Ala	Thr	Asp	Ile	Leu	His	Glu	Leu	Ala	Lys	His	Lys	Ser	Leu
	290					295					300				
Gly	Val	Lys	Thr	Val	Gln	Cys	Glu	Asp	Glu	Ile	Ala	Gly	Cys	Ala	Ser
305					310					315					320
Ala	Val	Gly	Ala	Ala	Phe	Ala	Gly	Asp	Leu	Ala	Val	Thr	Thr	Thr	Ser
				325					330					335	
Gly	Pro	Gly	Val	Cys	Leu	Lys	Ser	Glu	Ala	Met	Asn	Leu	Ala	Val	Ile
			340					345					350		
Ala	Glu	Leu	Pro	Leu	Val	Val	Val	Asn	Val	Gln	Arg	Gly	Gly	Pro	Ser
		355					360					365			
Thr	Gly	Met	Pro	Thr	Lys	Ser	Glu	Gln	Thr	Asp	Leu	Leu	Gln	Ala	Leu
	370					375					380				
Tyr	Gly	Arg	Asn	Gly	Glu	Ser	Pro	Met	Pro	Val	Ile	Ala	Ala	Thr	Ser
385					390					395					400
Pro	Thr	Asn	Cys	Phe	Asp	Ala	Ala	Tyr	Met	Ala	Ala	Lys	Ile	Ala	Leu
				405					410					415	
Glu	His	Met	Thr	Pro	Val	Val	Leu	Leu	Thr	Asp	Ala	Phe	Ile	Ala	Asn
			420					425					430		
Gly	Ser	Ala	Ala	Trp	Lys	Leu	Pro	Asn	Met	Asp	Glu	Tyr	Pro	Ala	Ile
		435					440					445			

565 570 575  
 Asn Thr Ala Glu Ile Leu Lys Lys Tyr Lys Lys Ile Val Val Ala Glu  
 580 585 590  
 Gln Asn Leu Gly Gln Phe Ala Gly Tyr Leu Arg Met Lys Val Pro Gly  
 595 600 605  
 Leu Asn Ile Ser Gln Phe Asn Gln Val Lys Gly Gln Pro Phe Val Thr  
 610 615 620  
 Arg Glu Leu Val Glu Ala Phe Thr Lys Leu Leu Glu Glu  
 625 630 635

<210> 7872  
 <211> 222  
 <212> PRT  
 <213> B.fragilis

<400> 7872  
 Asn Ala Val Glu Lys Met Lys Ile Ile Asn Leu Ser Glu Thr Asp Ser  
 1 5 10 15  
 Ile Leu Asn Gln Tyr Val Ser Glu Ile Arg Asn Val Glu Val Gln Asn  
 20 25 30  
 Asp Arg Leu Arg Phe Arg Arg Asn Ile Glu Arg Ile Gly Glu Val Met  
 35 40 45  
 Ala Tyr Glu Met Ser Lys Thr Phe Ala Tyr Ser Val Lys Glu Ile Gln  
 50 55 60  
 Thr Pro Leu Gly Ile Ala Pro Val Arg Thr Pro Asp Asn Pro Leu Val  
 65 70 75 80  
 Ile Ser Thr Ile Leu Arg Ala Gly Leu Pro Phe His Gln Gly Phe Leu  
 85 90 95  
 Ser Tyr Phe Asp Tyr Ala Glu Asn Ala Phe Val Ser Ala Tyr Arg Lys  
 100 105 110  
 Tyr Lys Asp Thr Leu Lys Phe Asp Ile His Ile Glu Tyr Ile Ala Ser  
 115 120 125  
 Pro Arg Ile Asp Gly Lys Thr Leu Ile Ile Thr Asp Pro Met Leu Ala  
 130 135 140  
 Thr Gly Gly Ser Met Glu Leu Ser Tyr Gln Ala Met Leu Thr Lys Gly  
 145 150 155 160  
 His Pro Ser Glu Ile His Val Ala Ser Ile Ile Ala Ser Gln Arg Ala  
 165 170 175  
 Val Asp His Ile Ala Ser Ile Leu Pro Glu Asp Lys Thr Thr Ile Trp  
 180 185 190  
 Cys Ala Ala Ile Asp Pro Glu Ile Asn Glu His Ser Tyr Ile Val Pro  
 195 200 205  
 Gly Leu Gly Asp Ala Gly Asp Leu Ala Phe Gly Glu Lys Glu  
 210 215 220

<210> 7873  
 <211> 337  
 <212> PRT  
 <213> B.fragilis

<400> 7873  
 Glu Met Ser Glu Thr Val Tyr Thr Ala Lys Asp Tyr Lys Ser Gly Gln  
 1 5 10 15  
 Pro Arg Trp Cys Pro Gly Cys Gly Asp His Ala Phe Leu Asn Ser Leu  
 20 25 30  
 His Lys Ala Met Ala Glu Leu Gly Val Ala Pro His Asn Ile Ala Val  
 35 40 45  
 Ile Ser Gly Ile Gly Cys Ser Ser Arg Leu Pro Tyr Tyr Val Asn Thr  
 50 55 60

Tyr Gly Phe His Thr Ile His Gly Arg Ala Ala Ala Val Ala Thr Gly  
 65 70 75 80  
 Ala Lys Val Ala Asn Pro Asp Leu Thr Ile Trp Gln Ile Ser Gly Asp  
 85 90 95  
 Gly Asp Gly Leu Ala Ile Gly Gly Asn His Phe Ile His Ala Val Arg  
 100 105 110  
 Arg Asn Ile Asp Leu Asn Met Ile Leu Leu Asn Asn Arg Ile Tyr Gly  
 115 120 125  
 Leu Thr Lys Gly Gln Tyr Ser Pro Thr Ser Asp Arg Gly Phe Val Ser  
 130 135 140  
 Lys Ser Ser Pro Tyr Gly Thr Val Glu Asp Pro Phe His Pro Ala Glu  
 145 150 155 160  
 Leu Cys Phe Gly Ala Arg Gly Arg Phe Phe Ala Arg Cys Val Ala Val  
 165 170 175  
 Asp Gly Pro Ala Ser Val Glu Val Leu Lys Ala Ala Ala Asn His Lys  
 180 185 190  
 Gly Ala Ser Val Val Glu Val Leu Gln Asn Cys Val Ile Phe Asn Asp  
 195 200 205  
 Gly Thr His Glu Ser Val Ala Thr Lys Glu Gly Arg Ser Lys Asn Ala  
 210 215 220  
 Ile Tyr Leu Glu His Gly Lys Pro Met Leu Phe Gly Glu Asn Lys Glu  
 225 230 235 240  
 Phe Gly Leu Met Gln Glu Gly Phe Gly Leu Lys Val Val Lys Leu Gly  
 245 250 255  
 Glu Asn Gly Val Thr Glu Lys Asp Ile Leu Ile His Asn Ala His Ser  
 260 265 270  
 Met Asp Asn Thr Leu Gln Leu Lys Leu Ala Leu Met Glu Gly Pro Asp  
 275 280 285  
 Phe Pro Ile Ala Leu Gly Val Ile Arg Asp Val Glu Ala Pro Thr Tyr  
 290 295 300  
 Asn Asp Ala Val Ala Glu Gln Ile Asp Glu Val Lys Ala Lys Lys Lys  
 305 310 315 320  
 Tyr His Asn Phe Gln Glu Leu Leu Met Thr Asn Glu Thr Trp Glu Val  
 325 330 335  
 Lys

&lt;210&gt; 7874

&lt;211&gt; 60

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7874

Gln Gly Lys Asp Asn Ala Pro Ala Lys Arg Ile Thr Tyr Pro Lys Gln  
 1 5 10 15  
 Pro Phe Thr Ser Pro Phe Pro Arg Leu Tyr Phe Lys Ile Leu Ile Ile  
 20 25 30  
 Asn Met Leu Val Phe Glu Leu Pro Asp Gln Leu Ser Trp Gly Ile Thr  
 35 40 45  
 Glu Ile Leu Phe Ala Val Phe Ile Glu Thr Gly Arg  
 50 55 60

&lt;210&gt; 7875

&lt;211&gt; 415

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7875

Phe Ile Leu Glu Lys Lys Ile Gly Lys Leu Ser Ile Arg Val Leu Leu



1	5	10	15
Asn Thr His Arg Arg Asn Asp Cys Glu Ile Tyr Pro Leu Ile Ile Arg			
20	25	30	
Val Val Tyr His Arg Arg Lys Ser Glu Tyr Ser Leu Gly Trp Lys Ile			
35	40	45	
His Thr Ser Asn Phe Ser Ala Asp Arg Glu Arg Val Val Tyr Ser Ser			
50	55	60	
Thr Gly Asn Leu Lys Arg Lys Asp Leu Gly Leu Ile Asn Asp Ala Ile			
65	70	75	80
Ser Gln Glu Arg Glu Arg Leu Leu Lys Ile Phe Ala Phe Leu Gln Gln			
85	90	95	
Asn Met Pro Gly Phe Ser Leu Ser Gln Leu Met Asp Lys Tyr Arg Met			
100	105	110	
Glu Arg Asn Leu Arg Tyr Val Asp Ala Phe Ile Val Arg Glu Ile Glu			
115	120	125	
Arg Leu Arg Gln Glu Gly Arg Ser Gly Thr Ala Gly Leu Tyr Leu Ser			
130	135	140	
Gly Leu Tyr Ser Leu Arg Arg Phe Leu Arg Gly Gln Lys Ile Thr Phe			
145	150	155	160
Arg Glu Leu Thr Tyr Cys Phe Leu Thr Asp Tyr Ile His Phe Leu Arg			
165	170	175	
Met Arg Gly Ile Ser Glu Asn Thr Val Asn Met Tyr Ile Arg Asn Leu			
180	185	190	
Arg Ala Val Tyr Asn Lys Ala Gln Lys Gln Gly Ile Asn Met Gly Cys			
195	200	205	
Glu Ser Pro Phe Arg Glu Leu Lys Leu Gln Thr Gln Glu Thr Ala Lys			
210	215	220	
Arg Ala Leu Cys Lys His Asp Ile Ala Arg Ile Val Ser Val Asp Leu			
225	230	235	240
Ser Ser Glu Pro Leu Leu Asp Arg Ala Arg Asp Leu Phe Met Phe Ser			
245	250	255	
Phe Tyr Ala Arg Gly Met Pro Phe Val Asp Ile Val Phe Leu Lys His			
260	265	270	
Asp Ser Ile Ile Asn Gly Ile Ile Tyr Tyr Glu Arg Asn Lys Thr Gly			
275	280	285	
Gln Arg Met Gln Val Arg Val Ile Pro Pro Leu Ala Ala Leu Ile Glu			
290	295	300	
Lys Tyr Arg Ser Ser Tyr Pro Tyr Val Leu Pro Tyr Ile Thr Ser Phe			
305	310	315	320
Ser Asp Arg Thr Ser Tyr Met Gln Tyr Arg Tyr Ala Leu Gly Asn Val			
325	330	335	
Asn Arg Leu Leu Lys Arg Leu Gly Arg Arg Leu His Leu Pro Leu Val			
340	345	350	
Leu Thr Thr Tyr Val Ala Arg His Ser Trp Ala Thr Ile Ala Lys Glu			
355	360	365	
Glu Gly Phe Ser Ile Ala Ser Ile Ser Glu Gly Leu Gly His Thr Ser			
370	375	380	
Glu Ala Thr Thr Gln Ile Tyr Leu Gln Ser Phe Asn Ser Glu Val Ile			
385	390	395	400
Asp Lys Ile Asn Glu Gln Val Val Ala Ser Ile Gly Arg His Ile			
405	410	415	

&lt;210&gt; 7876

&lt;211&gt; 117

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7876

Ala Glu Gly Glu Arg Lys Glu Asn Glu Gly Asn Cys Leu Thr Val Thr

1                    5                    10                    15  
 Cys Leu Ile Phe Ile Ser Ser Ser Val Phe Phe Arg Ile Ser Arg Leu  
                   20                    25                    30  
 Ala Phe Glu Ala Met Arg Ser Asn Ser Thr Glu Asn Ala Glu Phe Gln  
                   35                    40                    45  
 Val Asn Pro Ser Ser Thr Leu Thr Ser Pro Val Thr Gly Val Glu Glu  
                   50                    55                    60  
 Ala Ala Phe Leu Ile Arg Ile Ser Arg Cys Leu His Thr Thr Asn Ser  
 65                    70                    75                    80  
 Ala Val Ser Thr Gly Arg Val Thr Gly Thr Leu Leu Ile Ser Asp Lys  
                   85                    90                    95  
 Asp Gly Ser Pro Val Asn Ala Glu Phe Met Pro Val Val Ser Leu Pro  
                   100                    105                    110  
 Ile Thr Asn Lys Ser  
                   115

<210> 7877  
 <211> 300  
 <212> PRT  
 <213> B.fragilis

<400> 7877  
 Phe Thr Lys Leu Lys Met Lys Leu His Tyr Lys Lys Glu His Ile Ser  
 1                    5                    10                    15  
 Cys Thr Asn Tyr Lys Ser Glu Ser Tyr Glu Gly Phe Gly Ile Gly Thr  
                   20                    25                    30  
 Leu Thr Ser Gly Ser Asn Phe Asn Ser Gln Thr Leu Ser Val Lys Thr  
                   35                    40                    45  
 Asn Phe Leu Ile Phe Ile Leu Glu Gly Glu Val Glu Ile Ile Pro Lys  
                   50                    55                    60  
 Glu Gly Lys Ile Lys Arg Val Ile Ala Gln Glu Phe Phe Phe Ile Ser  
 65                    70                    75                    80  
 Ala Leu Ser Thr Tyr Glu Ile Gln Val Arg Val Pro Gly Arg Tyr Ile  
                   85                    90                    95  
 Tyr Met Ser Phe Leu Tyr Asn Asp Ile Lys Leu Cys Glu Lys His Met  
                   100                    105                    110  
 Leu Glu Ser Tyr Leu Lys Glu Val Arg Glu Ala Ser Glu Glu Val Gly  
                   115                    120                    125  
 Ile Leu Ser Val Arg His Pro Leu Asn Leu Phe Leu Glu Leu Met Asp  
                   130                    135                    140  
 Ala Tyr Leu Arg Ala Gly Val Asn Cys Lys His Leu His Ser Ile Lys  
 145                    150                    155                    160  
 Glu Lys Glu Leu Phe Ile Ile Leu Arg Thr Ser Tyr Ser Lys Gln Glu  
                   165                    170                    175  
 Ile Val Asn Leu Phe His Glu Ile Ile Gly Thr Asn Met Ser Phe Lys  
                   180                    185                    190  
 Ala Ala Val Leu Leu His Val Asp Arg Val Asn Asn Arg Glu Glu Leu  
                   195                    200                    205  
 Ala Gln Ala Met Gly Met Ser Ile Thr Asp Leu Ala Arg Lys Phe Lys  
                   210                    215                    220  
 Val Glu Phe Gly Glu Ser Val Tyr Ser Trp Leu Leu Lys Gln Lys Asn  
 225                    230                    235                    240  
 Lys Lys Ile Ile Tyr Arg Leu Ala Gln Pro Gly Ala Ser Val Lys Glu  
                   245                    250                    255  
 Ile Val Tyr Glu Phe Gly Phe Ser Ser Ala Ala Ser Phe Asn Lys Tyr  
                   260                    265                    270  
 Cys Lys Lys Asn Phe Gly Asn Ser Pro Arg Glu Leu Val Arg Gln Leu  
                   275                    280                    285  
 Lys Asp Lys His Ile Asp Asn Gln Asn Leu Lys Ile

290

295

300

<210> 7878  
 <211> 261  
 <212> PRT  
 <213> B.fragilis

&lt;400&gt; 7878

Met Cys Met Arg Ser Thr Pro Ser Ala Phe Ile Gly Lys Asn Val Ser  
 1 5 10 15  
 Gly Gln Arg Ser Thr Phe Glu Glu Met Ala Thr Glu Met Pro Ile Asp  
 20 25 30  
 Leu Pro Glu Gly Lys Trp Thr Phe Leu Cys Leu Glu Gly Lys Val Gly  
 35 40 45  
 Asp Tyr Glu Ile Gly Ile Tyr Arg Gln Val Phe Pro His Lys Phe Ser  
 50 55 60  
 Pro Ala Val Ser Pro Gly Ile Thr Thr Leu Ser Asp Phe Arg Val Lys  
 65 70 75 80  
 Ala Tyr Tyr Glu Gln Lys Glu Asn Leu Glu Tyr Ser Leu Gly Glu Leu  
 85 90 95  
 Phe Phe Gly Arg Leu Asp Ser Met Glu Ile Thr Ala Asp Asn Gly Gly  
 100 105 110  
 Thr Gly Val Val Asp Leu Met Lys Asn Thr Asn Lys Ile Glu Val Arg  
 115 120 125  
 Val Lys Gly Ile Ala Asp Gly Ser Ser Ala Arg Ile Thr Ser Asp Asn  
 130 135 140  
 Gly Arg Phe Asn Ser Glu Asn Val Thr Pro Ala Asp Ala Gly Thr Ile  
 145 150 155 160  
 Ile Tyr Val Pro Tyr Tyr Ser Ala Ser Gln Thr Asp Asp Thr Arg Val  
 165 170 175  
 Phe Gln Phe Asp Val Leu Arg Leu Tyr Thr Asp Gly His Leu Phe Leu  
 180 185 190  
 Lys Leu Leu Asn Pro Asp Gly Thr Asp Val Ile Pro Gly Phe Thr Lys  
 195 200 205  
 Asp Leu Ile Asn Ala Ile Met Ser Ser Pro Ala Tyr His Thr Gln Glu  
 210 215 220  
 Asp Leu Asp Arg Glu Asp Thr Tyr Leu Ile Glu Leu Val Leu Ser Lys  
 225 230 235 240  
 Asp Gly Val Ile Val Ser Leu Arg Val Asn Gly Trp Glu Thr Val Ser  
 245 250 255  
 Thr Thr Pro Glu Val  
 260

<210> 7879  
 <211> 81  
 <212> PRT  
 <213> B.fragilis

&lt;220&gt;

&lt;221&gt; UNSURE

&lt;222&gt; (48)

&lt;223&gt; Identity of amino acid sequences at the above locations are unknown.

&lt;400&gt; 7879

Asn Arg Gln Arg Thr Leu Leu Tyr Cys Lys Pro Thr Thr Met Ser Ser  
 1 5 10 15  
 Pro Leu Ser Arg Tyr Pro His Gly Gly Ala Met Asp Leu Glu Phe Val  
 20 25 30  
 Met Arg Gln Thr Ala Arg Met Ser Gln Arg Ser Met Asn Pro Asp Xaa

35 40 45  
 Ser Trp Gly Phe Thr Ser Leu Asp Pro Ser Pro Leu Asn Leu Leu Ile  
 50 55 60  
 Lys Lys Ser Lys Val Phe Pro Gly Leu Pro Val Pro Phe Lys Lys His  
 65 70 75 80  
 Trp

<210> 7880  
 <211> 277  
 <212> PRT  
 <213> B.fragilis

<400> 7880  
 Ser Ile Val Arg Val Glu Lys Arg Phe Ser Lys Ile Phe Ser Ile Val  
 1 5 10 15  
 Val Tyr Ala Phe Leu Ala Leu Trp Met Gly Ala Cys Lys Ser Glu Pro  
 20 25 30  
 Val Arg Leu Pro Glu Leu Ser Gly His Arg Gly Ala Asp Cys Ile Ala  
 35 40 45  
 Pro Glu Asn Thr Leu Ala Ser Ala Asp Ser Cys Ile Lys Tyr Lys Ile  
 50 55 60  
 Asp Phe Met Glu Cys Asp Ile Cys Ile Ser Lys Asp Ser Val Phe Tyr  
 65 70 75 80  
 Leu Leu His Asp Ser Thr Leu Asp Arg Thr Thr Asn Gly Thr Gly Leu  
 85 90 95  
 Ile Arg Glu Trp Leu Ser Ala Asp Ile Asp Thr Leu Asp Ala Gly Ser  
 100 105 110  
 Trp Phe Gly Glu Lys Phe Ser Gly Gln Cys Val Pro Arg Leu Asp Val  
 115 120 125  
 Leu Leu Arg Lys Ala Lys Gln Asn Gly Leu Lys Leu Thr Leu Asp Tyr  
 130 135 140  
 Arg Thr Gly Asp Phe Gly Gln Leu Leu Asp Leu Val Arg Arg Glu Gly  
 145 150 155 160  
 Met Leu Glu Asn Cys Thr Phe Thr Phe Trp Ser Asp Lys Glu Ala Lys  
 165 170 175  
 Ala Phe Arg Gln Val Ala Pro Glu Ile Arg Thr Leu Gln Ala Tyr Val  
 180 185 190  
 Gly Gly Gly Ala Glu Leu Asp Lys Val Ile Ala Glu Ile Asn Pro Asn  
 195 200 205  
 Ile Ala Val Ile Arg Ile Asp Ser Leu Asp Lys Leu Leu Val Glu Arg  
 210 215 220  
 Cys His Lys Lys Gly Leu Lys Val Leu Ala Leu Ala Leu Gly Thr Asp  
 225 230 235 240  
 Asp Val Glu Glu Ser Asp Arg Lys Ala Ile Glu Leu Gly Val Asp Val  
 245 250 255  
 Leu Ala Thr Asp Arg Pro Glu Leu Phe Val Lys Lys Tyr Arg Pro Glu  
 260 265 270  
 His Thr Trp Thr Lys  
 275

<210> 7881  
 <211> 62  
 <212> PRT  
 <213> B.fragilis

<400> 7881  
 Leu Tyr Ser Gly Lys Leu Asn Asn Ser Ile Leu Tyr Ala Asn Phe Ile  
 1 5 10 15

Leu Cys Met Ile Tyr Phe Val Ser Val Leu Gly Asn Cys Ile Val Arg  
 20 25 30  
 Leu Ile Phe Ser Phe Asp Leu Glu Ala Arg Gly Thr Tyr Gln Asn Asp  
 35 40 45  
 Asn Tyr Val Phe Glu Glu Gln Met Asp Asp Ile Phe Gln Glu  
 50 55 60

<210> 7882  
 <211> 798  
 <212> PRT  
 <213> B.fragilis

<400> 7882

Pro Ser Lys Gly Lys Ala Gly Lys Met Ser Val Asn Tyr Asn Phe Asn  
 1 5 10 15  
 Tyr Asn Trp Ser Gln Pro Ala Asn Met Pro Asn Lys Leu Asp Ala His  
 20 25 30  
 Asp Ala Ala Phe Tyr Lys Asn Met Ser Met Thr Asn Asp Gly Leu Ala  
 35 40 45  
 Pro Ala Tyr Thr Asp Asp Glu Leu Glu Leu Phe Arg Asn Gly Ser Asp  
 50 55 60  
 Pro Arg Arg Tyr Pro Asn Thr Asp Trp Gln Lys Leu Cys Leu Lys Asn  
 65 70 75 80  
 Ser Ala Pro Glu Met Gln His Thr Leu Thr Val Thr Gly Gly Ser Glu  
 85 90 95  
 Lys Ile Lys Ala Tyr Thr Ser Leu Gly Phe Tyr Asp Gln Lys Ser Leu  
 100 105 110  
 Tyr Lys Phe Asp Val Asn Ser Phe Lys Arg Tyr Asn Phe Arg Thr Asn  
 115 120 125  
 Ile Val Ala Asp Phe Lys Glu Ile Gly Leu Lys Val Thr Ser Ser Ile  
 130 135 140  
 Glu Ala Tyr Lys Thr Asp Leu Arg Ser Pro Asn Ala Lys Ser Gly Asp  
 145 150 155 160  
 Ser Tyr Tyr His Thr Trp Gly His Ile Gln Asn Lys Ala Pro Trp Glu  
 165 170 175  
 Ile Ala Tyr Asn Pro Asn Gly Gln Ile Phe Asn Thr Pro Asp Asn Pro  
 180 185 190  
 Leu Met Glu Ile Ser Pro Asp Ala Gly Tyr Thr Lys Asn Glu Asn Leu  
 195 200 205  
 Ser Ala Ile Ala Asn Leu Ala Leu Glu Trp Ser Val Pro Tyr Val Pro  
 210 215 220  
 Gly Leu Arg Leu Lys Ala Leu Gly Asn Tyr Arg Ile Asn Asn Asp Lys  
 225 230 235 240  
 Ser Lys Ser Trp Lys Lys Ser Pro Leu Ala Tyr Asp Trp Asp Gly Asn  
 245 250 255  
 Pro Asn Asp Pro Gly Lys Pro Ser Leu Ser Lys Ser Tyr Ser Asn Trp  
 260 265 270  
 Ser Ser Tyr Thr Val Gln Gly Phe Ala Asn Tyr Asp Arg Thr Phe Asn  
 275 280 285  
 Gln Val His Thr Ile Ser Ala Thr Ala Gly Ile Glu Ala Tyr Lys Leu  
 290 295 300  
 Phe Lys Asp Asp Ala Ser Leu Ser Arg Glu Glu Tyr Leu Leu Asp Val  
 305 310 315 320  
 Asp Gln Ile Gly Ala Gly Pro Val Ser Thr Ala Lys Asn Ser Ser Ser  
 325 330 335  
 Glu Gly Glu Glu Ala Arg Ala Gly Val Val Ala Arg Leu Lys Tyr Asp  
 340 345 350  
 Tyr Ala Ser Lys Tyr Val Ala Glu Ala Ser Leu Arg Tyr Asp Gly Ser  
 355 360 365

Asp Asn Phe Pro Arg Gly Lys Arg Trp Gly Thr Phe Tyr Ala Gly Ser  
 370 375 380  
 Leu Ala Trp Val Ile Ser Glu Glu Ser Phe Trp Gln Thr Leu Lys Asp  
 385 390 395 400  
 Arg His Ile Phe Asp Gln Phe Lys Val Arg Ala Ser Tyr Gly Glu Ile  
 405 410 415  
 Gly Ser Asp Ala Ile Gly Arg Tyr Ala Tyr Leu Gln Ser Tyr Gly Leu  
 420 425 430  
 Asn Asp Arg Gly Tyr Leu Leu Asn Gly Ser Trp Tyr Pro Gly Phe Ser  
 435 440 445  
 Glu Gly Ala Leu Val Ser Lys Asp Ile Thr Trp Tyr Thr Thr Arg Asp  
 450 455 460  
 Phe Asn Ile Gly Phe Asp Phe Gly Ser Leu Asn Asn Arg Leu Ser Gly  
 465 470 475 480  
 Ser Val Asp Tyr Phe Arg Lys Ser Thr Lys Gly Tyr Leu Thr Ser Pro  
 485 490 495  
 Ser Ala Val Ala Tyr Thr Asp Pro Leu Gly Ile Ala Leu Pro Lys Val  
 500 505 510  
 Lys Ser Asn Gly Glu Phe Ile Arg Gln Gly Ala Glu Phe Ile Leu Gln  
 515 520 525  
 Trp Lys Glu Lys Arg Gly Asp Phe Glu Tyr Thr Leu Ser Gly Asn Phe  
 530 535 540  
 Thr Tyr Phe Asp Gln Tyr Trp Asn Ile Asn Pro Asn Glu Ala Glu Thr  
 545 550 555 560  
 Asp Thr Lys Asn Pro Tyr Lys Arg Thr Thr Gln Ala Lys Gly Tyr Trp  
 565 570 575  
 Gly Ile Gly Tyr Asp Cys Leu Gly Tyr Tyr Gln Asn Gln Glu Asp Ile  
 580 585 590  
 Met Asn Ser Pro Lys Arg Gln Ser Ser Val Asn Leu Gly Ala Gly Asp  
 595 600 605  
 Leu Lys Tyr Asn Asp Phe Asn Gly Asp Gly Ile Ile Asp Gly Ser Asp  
 610 615 620  
 Gln His Arg Ile Gly Lys Asn Ser Met Pro Arg Gly Gln Tyr Gly Phe  
 625 630 635 640  
 Ser Ala Asp Leu Asn Tyr Lys Gly Trp Phe Met Asn Met Leu Trp Gln  
 645 650 655  
 Gly Ala Thr Pro Ala Asp Leu Tyr Met Gly Gly Met Ile Gln Gly Ser  
 660 665 670  
 Gln Ser Gly Ser Gly Tyr Pro Pro Val Ile Tyr Asp Phe Gln Thr Asp  
 675 680 685  
 Val Trp Thr Pro Asn Asn Thr Gly Ala Arg Tyr Pro Arg Leu Arg Ser  
 690 695 700  
 Thr Ala Ser Tyr Asn Gly Ser Asn Asn Tyr Gly Ser Ser Asp Phe Trp  
 705 710 715 720  
 Leu Ile Asn Thr Gly Tyr Leu Arg Leu Lys Thr Leu Ser Ile Gly Tyr  
 725 730 735  
 Asp Phe Lys His Lys Leu Leu Lys Arg Val Ala Trp Met Asn Lys Cys  
 740 745 750  
 Asn Val Ser Leu Asn Gly Tyr Asn Leu Leu Thr Phe Ser Lys Ala Asn  
 755 760 765  
 Lys Phe Asp Ile Asp Pro Glu Ile Gly Asp Gly Asn Leu Tyr Thr Tyr  
 770 775 780  
 Pro Val Ser Arg Val Tyr Ser Ile Ser Val Asn Val Gly Phe  
 785 790 795

&lt;210&gt; 7883

&lt;211&gt; 579

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7883

Ser His Phe Leu Phe Cys Cys Lys Met Ile His Gln Lys Lys Phe Val  
 1 5 10 15  
 Thr Ile Ser Ile Gly Tyr Arg Ile Tyr Lys Met Leu Gly Met Leu Cys  
 20 25 30  
 Leu Cys Val Leu Val Tyr Ser Cys Gly Ser Lys Ser Pro Leu Thr Met  
 35 40 45  
 Arg Leu Phe Met Gln Ala Gly Gly Ala Thr Val Glu Leu Pro Asn Thr  
 50 55 60  
 Ser Ser Ala Asp Ser Val Phe Thr Val Ser Glu Thr Val Gly Phe Arg  
 65 70 75 80  
 Asp Ser Val Val Val Asp Asn Pro Val Ser Ser Val Asp Ser Leu Glu  
 85 90 95  
 Glu Asp Ile Trp Lys Ser Ile Asp Met Asp Arg Ile Asp Ile Val Ala  
 100 105 110  
 Gln Arg Lys Ser Ile Glu Arg Ile Leu Glu Arg Asn Gly Glu Val Thr  
 115 120 125  
 Leu Met Phe Tyr Val Lys Ala Pro Lys Val Leu Leu Asp Ser Cys Trp  
 130 135 140  
 Lys Leu Thr Met Tyr Pro Glu Leu Ile Glu Lys Asp Ser Ser Val Leu  
 145 150 155 160  
 Leu Ser Pro Val Ile Leu Arg Gly Lys Glu Phe Ile Arg Thr Gln Glu  
 165 170 175  
 Ser Gln Tyr Lys Ala Tyr Asp Asp Phe Leu Lys Gly Ile Ile Pro Glu  
 180 185 190  
 Ser Lys Tyr Asp Ser Ala Phe Val Asp Arg Glu Gly Ile Arg Lys Asp  
 195 200 205  
 Ile Phe Ala Arg Gln Arg Leu Phe Trp Lys Val Tyr Glu Ala Glu Arg  
 210 215 220  
 Arg Arg Arg Leu Ala Tyr Leu Arg Trp Lys Ala Leu Met Asp Lys Arg  
 225 230 235 240  
 His Gly Trp Ile Ser Thr Lys Ala Glu Gly Asn Arg Asn Thr Leu Lys  
 245 250 255  
 Gln Arg Met Gln Arg Asn Val Leu Glu Arg Ser Val Glu Lys Phe Ile  
 260 265 270  
 Ala Gly Tyr Asp Thr Val Gly Ile Arg Ala Ser Tyr Gln Lys Lys Tyr  
 275 280 285  
 Asp Arg Arg Thr Asp Phe Trp Pro Ala Tyr Arg Leu Pro Arg Ala Met  
 290 295 300  
 Thr Val Lys Asp Val Pro Ser Arg Phe Gln Glu Leu Tyr Leu Ser Gly  
 305 310 315 320  
 Gly Arg Leu Glu Asp Ile Arg Asn Tyr Ser Phe Thr Arg Arg Asp Ser  
 325 330 335  
 Ile Glu Ile Ala Ser His Arg Tyr Phe Arg Lys Ala Ile Ala Glu Asn  
 340 345 350  
 Glu Tyr Asn Arg Asp His Gln Asp Leu Ile Arg Asp Arg Ile Ile Arg  
 355 360 365  
 Phe Pro Tyr Ala Asp Ser Ala Met Val Asn Gln Thr Ala Asp Pro Ser  
 370 375 380  
 Glu Asp Phe Ser Tyr Leu Tyr Met Tyr Arg Ile Pro Val Arg Glu Gly  
 385 390 395 400  
 Met Lys Lys Leu Tyr Ile Thr Leu Arg Gly Asn Val Leu Ala Thr Asp  
 405 410 415  
 His Ser Val Trp Ser Leu Pro Pro Ala Asp Thr Leu Thr Phe Val Ile  
 420 425 430  
 Ala Ser Val Ala Asp Leu Ala Asp Ala Thr Leu Ala Arg Arg Phe Asp  
 435 440 445  
 Ile Ala Gly Asp Ser Val Asn His Leu Thr Pro Glu Arg Glu Glu Tyr

450                      455                      460  
 Ala Gln Gly Leu Glu Ala Leu Ser Asn Arg Glu Tyr Gln Arg Ala Leu  
 465                      470                      475                      480  
 Gly Ile Leu Glu Lys Tyr Pro Asp Tyr Asn Thr Ala Val Ala Leu Thr  
                                  485                      490                      495  
 Cys Leu Gly Tyr His Ala Lys Ser Glu Asp Leu Leu Lys Gln Leu Pro  
                                  500                      505                      510  
 Gln Thr Ala Ala Val Glu Tyr Leu Arg Ala Ile Val Asn Val Arg Leu  
                                  515                      520                      525  
 Glu Asp Tyr Gln Ala Ala Ala Glu Leu Leu Leu Glu Ala Cys Arg Lys  
                                  530                      535                      540  
 Asp Thr Lys Tyr Val Tyr Arg Thr Glu Met Asp Ser Asp Ile Ala Ala  
 545                      550                      555                      560  
 Leu Leu Pro Arg Phe Met Gly Leu Lys Glu Glu Leu Glu Arg Ile Ala  
                                  565                      570                      575  
 Ser Glu Glu

<210> 7884  
 <211> 189  
 <212> PRT  
 <213> B.fragilis

<400> 7884  
 Ile Ile Val Met Ala Phe Lys Arg Ser Val Phe Leu Phe Leu Leu Val  
 1                      5                      10                      15  
 Val Ser Ser Thr Phe Leu Gly Val Glu Ile Ala Arg Gly Gln Val Tyr  
                                  20                      25                      30  
 Ser Leu Gln Thr Asn Val Leu Gly Trp Gly Thr Thr Asn Met Asn Leu  
                                  35                      40                      45  
 Glu Phe Gly Leu Lys Phe Ser His Arg Trp Thr Phe His Phe Pro Leu  
                                  50                      55                      60  
 Gln Tyr Asn Pro Phe Ser Phe Gly Asp Ala Arg Leu Arg Asn Leu Ser  
 65                      70                      75                      80  
 Ala Ser Pro Gly Val Arg Tyr Trp Ile Arg Glu Ser Tyr Gly Arg Ser  
                                  85                      90                      95  
 Tyr Phe Leu Gly Ile His Gly Val Ser Thr Met Tyr Asn Val Gly Gly  
                                  100                      105                      110  
 Val Phe Gly Asp Lys Tyr Arg Tyr Glu Gly Tyr Gly Phe Gly Gly Gly  
                                  115                      120                      125  
 Leu Ser Leu Gly Tyr Asn Arg Pro Leu Ser Pro His Trp Asn Leu Glu  
                                  130                      135                      140  
 Phe Glu Ala Gly Leu Gly Val Leu Trp Thr His Tyr Asp Lys Tyr Val  
 145                      150                      155                      160  
 Cys Lys Ala Cys Gly Gln Lys Val Ala Thr Phe Lys Gly Ala Arg Leu  
                                  165                      170                      175  
 Ile Pro Thr Lys Leu Ala Val Asn Ile Val Tyr Leu Phe  
                                  180                      185

<210> 7885  
 <211> 392  
 <212> PRT  
 <213> B.fragilis

<400> 7885  
 Leu His Lys Met Ser Leu Leu Lys Lys Lys Tyr Met Arg Cys Val Lys  
 1                      5                      10                      15  
 Gly Ile Tyr Ile Phe Phe Leu Leu Leu Ser Phe Ile Ser Cys Glu Leu  
                                  20                      25                      30



Glu Asp Lys Ile Gly Arg Tyr Thr Ser Gly Asp Asn Pro Val Glu Val  
 35 40 45  
 Glu Leu Met Thr Arg Asn Val Thr Leu Gly Gly Ser Glu Ser Gly Val  
 50 55 60  
 Thr Leu Lys Arg Leu Arg Val Ile Ala Val Ala Lys Asn Ser Gly Lys  
 65 70 75 80  
 Val Glu Met Asn Arg Arg Ala Asp Leu Ser Asp Pro Ser Ser Ser Gly  
 85 90 95  
 Leu Glu His Thr Gly Gly Val Phe Lys Leu Tyr Leu Arg Pro Gly Asp  
 100 105 110  
 Tyr Asp Leu Phe Val Ile Gly Asn Glu Thr Thr Gly Met Asn Ser Ala  
 115 120 125  
 Leu Thr Gly Glu Pro Ser Leu Ser Glu Ile Lys Ser Val Pro Val Thr  
 130 135 140  
 Leu Pro Val Asp Thr Ala Glu Phe Val Val Cys Lys His Leu Asp Ile  
 145 150 155 160  
 Arg Ile Arg Asn Ala Ala Ser Ser Thr Pro Val Thr Gly Glu Val Ser  
 165 170 175  
 Val Asp Glu Gly Leu Thr Trp Asn Ser Ala Phe Ser Val Glu Leu Glu  
 180 185 190  
 Arg Ile Ala Ser Lys Ala Ser Leu Glu Ile Arg Lys Asn Thr Asp Glu  
 195 200 205  
 Asp Ile Lys Ile Arg Gln Val Thr Val Lys Gln Leu Pro Ser Phe Ser  
 210 215 220  
 Phe Leu Ser Pro Ser Ala Tyr Pro Leu Ser Gly Gly Leu Thr Val Thr  
 225 230 235 240  
 Asp Thr Arg Ser Phe Ser Thr Pro Val Ser Ile Ala Gly Glu Lys Asp  
 245 250 255  
 Val Pro Ser Gly Tyr Pro Tyr Thr Ser Val Val Gln Gly Lys Asn Ser  
 260 265 270  
 Phe Ile Leu Pro Glu Tyr Ile Trp Asp Asn Thr Ala Gly Lys Gly Arg  
 275 280 285  
 Ala Ser Phe Met Glu Ile Glu Ala Glu Arg Asn Gly Ala Ser Glu Thr  
 290 295 300  
 Trp Gln Ile Leu Leu Gly Lys Ser Thr Asp Ile Pro Ala Asp Tyr Ser  
 305 310 315 320  
 Leu Gly Arg Asn Thr Tyr Tyr Arg Tyr Met Leu Thr Val Asn Pro Leu  
 325 330 335  
 Asn Val Asp Val Asn Val Ser Val Glu Pro Trp Gln Asn Thr Thr Ala  
 340 345 350  
 Tyr Asp Thr Ile Pro Gly Ala Lys Ile Val Phe Ser Arg Val Asn Val  
 355 360 365  
 Gly Tyr Ser Tyr Ala Ser Glu Ser Val Val Thr Phe Thr Thr Lys Asn  
 370 375 380  
 Leu Pro Pro Val Ser Val Ser Leu  
 385 390

&lt;210&gt; 7886

&lt;211&gt; 90

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7886

Tyr Met Ile Phe Val Gly Lys Lys Asn Ser Thr Ser Phe Phe Leu Leu  
 1 5 10 15  
 Ile Ser Leu Ile Leu Gly Leu Ala Leu Tyr Thr Ala Leu Phe Ser Ser  
 20 25 30  
 Cys Val Tyr Glu Asp Leu Ser Lys Cys Ser Arg Met Phe Met Leu Gln  
 35 40 45

Pro Arg Tyr Leu Leu His Thr Gly Glu Gly Asp Arg Phe Gly Glu Ala  
 50 55 60  
 Val His His Ile Asp Val Tyr Ala Phe Asp Ser Leu Gly Ile Tyr Arg  
 65 70 75 80  
 Gln Lys Cys Phe Gly Thr Lys Glu His Ile  
 85 90

<210> 7887  
 <211> 66  
 <212> PRT  
 <213> B.fragilis

<400> 7887  
 Ser Gly Tyr Ser Gly Ile Tyr Arg Ile Glu Thr Met Arg Phe Pro Ser  
 1 5 10 15  
 Leu Ile Ile Glu Lys Ala Ser Tyr Ser Phe Ala His Ile Ile Gly Gly  
 20 25 30  
 Leu Val Val Phe Ile Lys Thr Glu Cys Gly Val Ile Leu Asp Phe Asp  
 35 40 45  
 Ser Thr Pro Phe Leu Gln Asp Ala Ile Met Gln Asn Arg Ile Phe Pro  
 50 55 60  
 Pro Arg  
 65

<210> 7888  
 <211> 443  
 <212> PRT  
 <213> B.fragilis

<400> 7888  
 Ser Leu Val Lys Pro Ile Asp Ser Met Ile Lys Leu Tyr Phe Lys Gln  
 1 5 10 15  
 Ala Trp Gln Leu Leu Lys Gln Asn Pro Leu Phe Ser Ser Val Tyr Val  
 20 25 30  
 Leu Gly Thr Gly Leu Gly Ile Ala Met Thr Met Ser Leu Val Ile Ile  
 35 40 45  
 Tyr Tyr Ile Lys Met Ala Pro Val Tyr Pro Glu Glu Asn Arg Asn Arg  
 50 55 60  
 Ile Leu Val Ser Lys Gly Met Thr Ala Ile Glu Gln Gly Asn Glu Asn  
 65 70 75 80  
 Asn Trp Phe Ser Ser Asn Val Ser Phe Gln Thr Val Lys Arg Phe Tyr  
 85 90 95  
 Tyr Pro Leu Lys Ser Ala Glu Ala Val Gly Cys Ser Leu Asp Gly His  
 100 105 110  
 Thr Thr Ser Leu Leu Glu Leu Ser Glu Ser Lys Asp Leu Lys Glu Val  
 115 120 125  
 Gln Val Lys Leu Val Asp Ala Gly Phe Trp Lys Val Phe Ser Phe Ala  
 130 135 140  
 Phe Val Asp Gly Lys Pro Phe Thr Arg Ala Asp Phe Asp Ser Gly Leu  
 145 150 155 160  
 Arg Lys Ala Val Ile Ser Val Thr Leu Ala Arg Arg Leu Tyr Gly Asp  
 165 170 175  
 Asn Ala Pro Val Gly Arg Thr Phe Val Leu Asp Ser Asp Glu Tyr Gln  
 180 185 190  
 Val Cys Gly Val Val Lys Asp Val Ser Phe Ile Thr Pro Ala Thr Tyr  
 195 200 205  
 Ala Asp Ile Trp Leu Pro Leu Thr Val Asp Ala Glu Val Val Glu Glu  
 210 215 220  
 Lys Glu Gly Ser Tyr Glu Leu Ile Gly Asn Leu Ser Val Tyr Met Leu

225 230 235 240  
 Ala Pro Ser Val Gly Ser Lys Asp Lys Val Ala Gly Glu Val Arg Asp  
 245 250 255  
 Ala Phe Arg Lys Tyr Asn Phe Ser Gln Lys Lys Tyr Lys Val Asp Leu  
 260 265 270  
 Tyr Gly Gln Pro Val Ser Tyr Trp Lys Ser Thr Phe Tyr Glu Tyr Cys  
 275 280 285  
 Asn Ser Ala Pro Asp Trp Gly Lys Leu Ile Arg Thr Tyr Gly Thr Ile  
 290 295 300  
 Leu Leu Ala Leu Leu Phe Val Pro Ala Leu Asn Leu Ala Gly Met Ile  
 305 310 315 320  
 Ala Ser Arg Met Lys Arg Gln Leu Ser Glu Met Gly Ile Arg Lys Ala  
 325 330 335  
 Phe Gly Ala Ser Lys Ala Ser Leu Leu Met Gln Val Phe Trp Glu Asn  
 340 345 350  
 Leu Phe Leu Thr Gly Leu Gly Gly Leu Leu Gly Leu Leu Leu Ser Tyr  
 355 360 365  
 Leu Ile Val Tyr Cys Gly Arg Asn Trp Leu Pro Asp Leu Leu Ser Ala  
 370 375 380  
 Tyr Ser Asp Val Ile Pro Glu Gly Val Asp Ser Phe Leu Thr Pro Gly  
 385 390 395 400  
 Met Leu Leu Asn Pro Val Val Ile Gly Ile Thr Phe Leu Val Ser Leu  
 405 410 415  
 Ile Leu Asn Val Leu Ser Ala Leu Ile Pro Ala Leu His Ala Leu Lys  
 420 425 430  
 Lys Asp Ile Val Tyr Ser Leu Asn Asp Lys Arg  
 435 440

&lt;210&gt; 7889

&lt;211&gt; 425

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7889

Ile Ala Met Asn Leu Met Met Ile Leu Arg Gln Leu Trp Asn Gln Arg  
 1 5 10 15  
 Ala Ala Asn Gly Trp Ile Leu Gly Glu Leu Val Val Val Thr Tyr Phe  
 20 25 30  
 Leu Trp Gly Val Val Asp Pro Val Tyr Val Leu Leu Ser Asp Lys Ala  
 35 40 45  
 Leu Pro Asp Asn Tyr Asp Leu Thr Asp Thr Tyr Leu Leu Ser Ile Gly  
 50 55 60  
 Ala Tyr Ser Ala Asn His Thr Arg Tyr Asn Pro Glu Leu Asp Ser Asp  
 65 70 75 80  
 Ser Leu Lys Gln Val Asp Phe Met Arg Ile Val Asp Gln Val Arg Arg  
 85 90 95  
 Tyr Pro Gly Val Ser Asp Val Thr Val Ser Phe Phe Asn Ser Tyr Pro  
 100 105 110  
 Gln Ser Gly Thr Trp Asn Gly Gly Gln Leu Phe Asn Asp Thr Ile Phe  
 115 120 125  
 Ala Asn Ile Gln Gln Met Thr Phe Leu Ser Gly Thr Asp Tyr Phe Gly  
 130 135 140  
 Val Phe Arg Ile His Asp Ala Arg Thr Gly Glu Ile Pro Pro Val Leu  
 145 150 155 160  
 Ala Glu Gly Glu Gln Gly Ile Tyr Leu Thr Pro Asp Val Ala Glu Lys  
 165 170 175  
 Leu Phe Gly Glu Lys Tyr Pro Gln Asn Lys Trp Ile His Trp Gly Asp  
 180 185 190  
 Ser Thr Arg Lys Ser Pro Leu Thr Ala Val Ile Asp Pro Leu Gln Ile

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<400> 7890

<400> 7891

Thr Thr Arg Cys Pro Met Glu Glu Val Ile Lys Leu Asn Ser Val Asp  
 1 5 10 15  
 Gln Tyr Asn Lys Met Tyr Gly Leu Glu Thr Leu His Pro Leu Val Thr  
 20 25 30  
 Val Val Asp Leu Ser Lys Ala Thr Val Phe Pro Thr His Phe Thr Leu  
 35 40 45  
 Asn Tyr Gly Leu Tyr Ala Leu Phe Leu Lys Gln Thr Lys Cys Gly Asp  
 50 55 60  
 Leu Arg Tyr Gly Arg Gln Met Tyr Asp Tyr Gln Glu Gly Thr Val Thr  
 65 70 75 80  
 Ser Phe Ala Pro Gly Gln Val Val Glu Val Lys Leu Asn Asp Gly Val  
 85 90 95  
 Arg Pro Met Ser His Gly Ile Leu Phe His Pro Asp Leu Ile Arg Gly  
 100 105 110  
 Thr Ser Leu Gly Gln Glu Ile Lys His Tyr Ser Phe Phe Ser Tyr Ala  
 115 120 125  
 Ser Asn Glu Ala Leu His Leu Ser Asp Asp Glu Lys Lys Ile Phe Gln  
 130 135 140  
 Asp Cys Leu Asp Lys Val Gln Gln Glu Leu Ser Arg Pro Ile Asp Lys  
 145 150 155 160  
 His Ser Lys Arg Leu Ile Ala Arg Asn Ile Glu Leu Leu Leu Asp Tyr  
 165 170 175  
 Cys Met Arg Phe Tyr Glu Arg Gln Phe Val Thr Arg Ser Lys Val Asn  
 180 185 190  
 Lys Asp Val Leu Met Lys Phe Glu Asp Leu Leu Asp Val Tyr Phe Gln  
 195 200 205  
 Ser Glu Gln Ser Pro Asn Glu Lys Leu Pro Thr Val Lys Tyr Phe Ala  
 210 215 220  
 Asp Lys Val Asn Leu Ser Ser Asn Tyr Phe Gly Asp Leu Ile Lys Lys  
 225 230 235 240  
 Glu Thr Gly Lys Thr Ala Gln Glu Tyr Ile Gln Gly Lys Ile Ile Asn  
 245 250 255  
 Ile Ala Lys Glu Arg Ile Leu Ala Ser Glu Lys Thr Val Ser Glu Ile  
 260 265 270  
 Ala Tyr Glu Leu Gly Phe Gln Tyr Pro Gln His Phe Thr Arg Ile Phe  
 275 280 285  
 Lys Lys Val Val Gly Cys Thr Pro Thr Glu Tyr Arg Val Ile Gln Val  
 290 295 300

&lt;210&gt; 7892

&lt;211&gt; 429

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7892

Asn Met Ile Arg Leu Ile Met Lys Asn Leu Trp Ala Arg Arg Arg Lys  
 1 5 10 15  
 Asn Gly Trp Leu Leu Ala Glu Leu Ile Leu Val Ser Ile Val Thr Trp  
 20 25 30  
 Val Ile Val Asp Pro Leu Val Val Leu Thr His Asp Arg Asn Leu Pro  
 35 40 45  
 Glu Gly Tyr Arg Pro Asp His Leu Phe Leu Leu Gln Leu Ala Ser Tyr  
 50 55 60  
 Pro Ala Gly Ser Glu Gln Phe Arg Ala Glu Glu Asn Asp Thr Leu Ala  
 65 70 75 80  
 Arg Lys Ala Asn Phe Glu Arg Leu Leu Asn Lys Leu Lys His Tyr Glu  
 85 90 95  
 Gly Val Lys Tyr Thr Thr Phe Ile Leu Asn Glu Gln Tyr Pro Ser Ala  
 100 105 110

Leu Ser Ile Ser Asn Gly Asn Thr Met Phe Asp Thr Ile Pro Val Arg  
 115 120 125  
 Thr Leu Arg Leu Ala Phe Ile Pro His Thr Asp Tyr Phe Arg Thr Met  
 130 135 140  
 Gly Met Glu Gly Ala Glu Gly Met Thr Ala Glu Gln Leu Asp Asn Arg  
 145 150 155 160  
 Asp Phe Leu Trp Thr Glu Ser Val Leu Thr Ala Asp Ile Ser Gln Arg  
 165 170 175  
 Leu Lys Asp Gly Lys Pro Leu Tyr Gly Arg Arg Leu Gly Asn Gly Asp  
 180 185 190  
 Glu Glu Asp Tyr Arg Val Gly Gly Val Ile Ala Pro Val Arg Tyr Arg  
 195 200 205  
 Ser Tyr Met Gln Pro Met Pro Ile Glu Leu Tyr Val Tyr Glu Glu Phe  
 210 215 220  
 Pro Asp Tyr Met Tyr Tyr Tyr Ile Pro Leu Ile Ala Leu Arg Ile Asp  
 225 230 235 240  
 Asp His Leu Ser Glu Lys Phe Phe Leu His His Phe Arg Glu Trp Met  
 245 250 255  
 Asn Lys Glu Leu Thr Val Gly Asn Tyr Tyr Val Lys Ser Val Gln Ser  
 260 265 270  
 Phe Ser Asp Ile Gln Glu Gln His Glu Phe Ser Glu Gly Ile Thr Asn  
 275 280 285  
 Gln Tyr Arg Leu Asn Leu Ala Leu Gly Ile Phe Phe Leu Val Asn Leu  
 290 295 300  
 Cys Leu Gly Val Ala Gly Thr Phe Trp Met Gln Thr Arg Ser Arg Arg  
 305 310 315 320  
 Glu Glu Val Gly Ile Met Leu Ser Phe Gly Gly Thr Pro Ser His Ile  
 325 330 335  
 Thr Arg Leu Leu Leu Tyr Glu Gly Trp Ile Leu Thr Thr Leu Gly Thr  
 340 345 350  
 Leu Thr Gly Cys Leu Leu Tyr Leu Gln Tyr Ala Leu Arg Asp Gly Leu  
 355 360 365  
 Tyr Thr Thr Cys Asn Ser Ala Glu Glu Ala Met Pro Ala Tyr Trp Ile  
 370 375 380  
 Asn His Phe Gly Leu His Phe Thr Ala Val Thr Leu Ile Val Tyr Leu  
 385 390 395 400  
 Leu Leu Leu Ile Val Val Ser Ile Gly Ile Trp Met Pro Ala His Lys  
 405 410 415  
 Leu Ser Arg Ile Ser Pro Val Asp Ala Leu Arg Asp Glu  
 420 425

&lt;210&gt; 7893

&lt;211&gt; 427

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7893

Lys Glu Leu Met Ile Lys Gln Tyr Phe Lys Gln Ser Leu Val Leu Leu  
 1 5 10 15  
 Gln Gln Asn Lys Leu Leu Ser Val Ile Ala Ile Ile Gly Thr Ala Leu  
 20 25 30  
 Ala Ile Ala Met Ile Met Cys Ile Val Leu Ile Tyr Gln Ala Arg Thr  
 35 40 45  
 Ala Asn Tyr Glu Pro Glu Ile Asn Arg Asp Arg Thr Leu Ser Ile Glu  
 50 55 60  
 Met Thr Ile Ala Gln Lys Ile Asp Asp Lys Gly Trp Asn Met Gly Asn  
 65 70 75 80  
 Gln Leu Ser Leu Arg Thr Ile Lys Glu Cys Phe Tyr Pro Met Thr Thr  
 85 90 95

Ala Glu Ala Val Ser Ala Val His Tyr Ser Met Thr Ser Leu Ala Ala  
 100 105 110  
 Thr Pro Asp Gly Thr Arg Glu Val Lys Cys Ala Val Ser Tyr Thr Asp  
 115 120 125  
 Asp Asn Phe Trp Arg Val Phe Gly Phe Arg Phe Leu His Gly Lys Pro  
 130 135 140  
 Tyr Gly Gln Glu Phe Val Ser Gly Glu Lys Lys Leu Val Val Thr Arg  
 145 150 155 160  
 Ser Leu Ala Arg Arg Leu Phe Gly Ile Asp Asn Ala Val Gly Arg Ile  
 165 170 175  
 Ile Ser Leu Gly Phe Val Asp Tyr Thr Val Cys Gly Val Val Ala Asp  
 180 185 190  
 Val Ser Val Leu Ala Glu Ala Ala Tyr Ala Glu Ala Trp Ala Pro Tyr  
 195 200 205  
 Thr Ala Leu Pro Asp Tyr Glu Arg Ser Val Ser Glu Gly Leu Gln Gly  
 210 215 220  
 Gly Tyr Ser Cys Tyr Ile Leu Val Pro Lys Gly Ala Asp Pro Asp Val  
 225 230 235 240  
 Val Arg Thr Glu Ala Gln Gln Asn Val Asp Arg Met Asn Ala Asn Gln  
 245 250 255  
 Lys Glu Leu Lys Leu Leu Leu Gly Gly Ala Pro Asp Thr Arg Leu Met  
 260 265 270  
 Ser Leu Ala Arg Asp Asn Pro Phe Asp Asp Pro Asp Thr Ser Arg Leu  
 275 280 285  
 Val Leu Ile Tyr Ile Val Val Ile Thr Ile Leu Leu Val Pro Ala  
 290 295 300  
 Ile Asn Leu Ser Gly Ile Thr Leu Ser Arg Met Arg Arg Arg Met Glu  
 305 310 315 320  
 Glu Ile Gly Val Arg Arg Ala Phe Gly Ala Thr Arg Gly Glu Leu Leu  
 325 330 335  
 Arg Gln Val Leu Ala Glu Asn Leu Val Val Thr Leu Met Gly Gly Val  
 340 345 350  
 Leu Gly Leu Ile Leu Ser Tyr Ile Ala Val Leu Cys Met Arg Asp Trp  
 355 360 365  
 Leu Leu Asn Thr Ser Met Ser Gly Tyr Tyr Gly Val Asp Thr Gln Val  
 370 375 380  
 Ser Ala Gly Met Val Ile Gln Pro Phe Val Phe Val Cys Ala Leu Leu  
 385 390 395 400  
 Phe Cys Leu Leu Met Asn Leu Leu Ser Ala Gly Ile Pro Ala Ile Arg  
 405 410 415  
 Val Ser Arg Thr Asn Ile Val Asn Ala Ile Lys  
 420 425

&lt;210&gt; 7894

&lt;211&gt; 224

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7894

Thr Lys Val Met Ile Thr Leu Thr Ser Leu Ser Lys Ile Tyr Arg Thr  
 1 5 10 15  
 Asn Glu Ile Glu Thr Val Ala Leu Glu Asn Val Asn Leu Lys Val Asp  
 20 25 30  
 Arg Gly Glu Phe Leu Ser Ile Met Gly Pro Ser Gly Cys Gly Lys Ser  
 35 40 45  
 Thr Leu Leu Asn Ile Met Gly Leu Leu Asp Ala Pro Thr Ala Gly Thr  
 50 55 60  
 Ile Glu Ile Asn Gly Thr His Thr Glu Gly Met Lys Asp Lys Glu Leu  
 65 70 75 80

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<210> 7895
<211> 401
<212> PRT
<213> B.fragilis
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Ile	Glu	Glu	Ile	Met	Ile	Lys	His	Leu	Leu	Lys	Gln	Ile	Trp	Ala	Gln
1				5					10					15	
Arg	Ser	Val	Asn	Ala	Trp	Leu	Trp	Phe	Glu	Leu	Met	Ile	Val	Ser	Val
			20					25					30		
Cys	Leu	Phe	Tyr	Val	Met	Asp	Tyr	Leu	Tyr	Val	Pro	Gly	Arg	Leu	Tyr
		35					40					45			
Ala	Pro	Pro	Leu	Gly	Phe	Asp	Thr	Glu	His	Val	Tyr	Arg	Val	Lys	Leu
	50					55					60				
Ala	Ser	Ile	Pro	Pro	Gly	Gly	Lys	Glu	Tyr	Lys	Pro	Gly	Asp	Thr	Asp
65					70					75					80
Ser	Leu	Lys	Ile	Glu	Gln	Trp	Phe	Ser	Ile	Leu	Ser	Arg	Leu	Arg	Ala
				85					90					95	
Tyr	Pro	Gly	Val	Glu	Ala	Val	Ser	Leu	Ser	Ile	Gly	Ser	His	Pro	Tyr
			100					105					110		
Asn	Gln	Asn	Ser	Ser	Ser	Gly	Ser	Arg	Gly	Ile	Asp	Thr	Thr	Trp	Val
		115					120					125			
His	Gly	Tyr	Val	Tyr	Asn	Val	Ser	Pro	Asp	Tyr	Phe	Arg	Val	Phe	Arg
	130					135					140				
Ile	Thr	Asp	Lys	Gln	Gly	Lys	Thr	Glu	Ser	Leu	Val	Gln	Ala	Ala	Asn
145					150					155					160
Gln	Glu	Asn	Thr	Trp	Ile	Ile	Ser	Ala	Glu	Thr	Glu	Arg	Glu	Phe	Ser
				165					170					175	
Ala	Lys	Gly	Thr	Asp	Ala	Leu	Gly	Lys	Gly	Val	Lys	Asn	Trp	Gly	Glu
			180					185					190		
Thr	Glu	Pro	Thr	His	Thr	Ile	Arg	Gly	Ile	Cys	Asn	Thr	Ile	Arg	Phe
		195					200					205			
Asp	Asp	Phe	Tyr	Pro	Leu	Tyr	Pro	Thr	Tyr	Ile	Glu	Cys	His	Ser	Glu
						215					220				
Ala	Ala	Leu	Leu	Gly	Arg	Arg	Gly	Asn	Asn	Ala	Glu	Phe	Cys	Val	Arg
225					230					235					240
Val	Arg	Pro	Asp	Ala	Asp	Gly	Val	Asp	Phe	Pro	Ser	Arg	Phe	Arg	Lys
				245					250					255	
Asp	Met	Lys	Val	Gln	Leu	Arg	Val	Gly	Asn	Phe	Tyr	Leu	Leu	Asp	Ile
			260					265					270		

[illegible]



Thr Ser Phe Asp Asp Leu Leu Glu Asn Tyr Tyr Arg Ser Asn Gly Lys  
 275 280 285  
 Ile Asn Asp Val Lys Thr Arg Ile Ala Ala Leu Gly Phe Phe Leu Leu  
 290 295 300  
 Asn Ile Leu Met Gly Val Ile Gly Thr Phe Trp Ile Arg Thr Gln Gln  
 305 310 315 320  
 Arg Arg Ser Glu Met Gly Leu Arg Leu Ala Leu Gly Ser Thr Arg Ala  
 325 330 335  
 Asn Leu Arg Ser Leu Leu Ile Gly Glu Gly Val Leu Leu Leu Ile Leu  
 340 345 350  
 Ala Thr Val Pro Ala Ala Val Ile Ser Leu Asn Leu Ala Phe Met Asp  
 355 360 365  
 Leu Leu Thr Asp Thr Met Pro Val Val Thr Val Thr Arg Phe Leu Ile  
 370 375 380  
 Val Gln Ala Met Thr Phe Val Ser Ile Val Val Met Ile Val Ile Gly  
 385 390 395 400  
 Ile

<210> 7896  
 <211> 215  
 <212> PRT  
 <213> B.fragilis

<400> 7896

Ser His Lys Val Gly Thr Tyr Val Val Tyr Phe Lys Val Arg Gln Lys  
 1 5 10 15  
 Glu Asp Met Pro Lys Leu Tyr Ala Glu Val Asn Glu Leu Val Arg Lys  
 20 25 30  
 Tyr Asn Thr Ser Gln Lys Glu Tyr Thr Val Asp Ile Phe His Gln Pro  
 35 40 45  
 Asp Pro Tyr Trp Gln Thr Trp Phe Arg Glu Gly Asn Thr Asn Glu Ile  
 50 55 60  
 Asp Trp Ala Ser Val Ile Lys Leu Tyr Gly Gly Ala Leu Leu Ala Leu  
 65 70 75 80  
 Leu Leu Val Pro Ala Ile Asn Leu Ser Gly Met Ile Ser Ser Arg Met  
 85 90 95  
 Asp Asp Arg Leu Ala Glu Met Gly Ile Arg Lys Ala Phe Gly Ala Asn  
 100 105 110  
 Arg Lys Gln Leu Leu Asn Gln Val Leu Trp Glu Asn Leu Leu Leu Thr  
 115 120 125  
 Cys Ile Gly Gly Leu Met Gly Leu Ile Val Ser Trp Gly Leu Leu Val  
 130 135 140  
 Leu Gly Arg Asn Trp Val Phe Ser Leu Phe Asp Lys Tyr Pro Thr Val  
 145 150 155 160  
 Ile Ser Asp Gly Val Asp Val Ala Ile Asn Pro Gln Met Leu Phe Ser  
 165 170 175  
 Pro Leu Met Phe Cys Val Thr Phe Ala Phe Cys Leu Ile Leu Asn Leu  
 180 185 190  
 Leu Ser Ala Trp Trp Pro Thr Trp Arg Ser Leu His Lys Asp Ile Ile  
 195 200 205  
 Asp Ser Leu Asn Glu Lys Lys  
 210 215

<210> 7897  
 <211> 81  
 <212> PRT  
 <213> B.fragilis

&lt;400&gt; 7897

Cys Lys Ala Ser Lys Gln Lys Asp Lys Lys Phe Phe Ser Gly Lys Arg  
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 Cys Ser Leu Leu Ile Leu Asn Asn Ala His Leu Tyr Ile Met Asn Gly  
 20 25 30  
 Ile Lys Val Gly Tyr Ser Ser His Gly Thr Trp Lys Lys Val Ile Asn  
 35 40 45  
 Arg Leu Leu Tyr Asn Phe Glu Pro Ser Asp Ser Ser Phe Phe Phe Ile  
 50 55 60  
 Ile Ser Pro Val Arg Val Val Val Leu Val Arg Glu Ala Asp Tyr Val  
 65 70 75 80  
 Lys

&lt;210&gt; 7898

&lt;211&gt; 133

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7898

Ser Phe His Ser Ile Met Lys Asn Thr Phe Cys Val Leu Ala Cys Phe  
 1 5 10 15  
 Phe Ile Thr Ile Phe Cys Gln Ala Gln Ser Val Glu Glu His Tyr Tyr  
 20 25 30  
 Phe Lys Asn Leu Ser Ile Arg Asn Gly Leu Ser Gln Asn Thr Val Asn  
 35 40 45  
 Ala Ile Leu Gln Asp Arg Lys Gly Phe Met Trp Leu Gly Thr Lys Asp  
 50 55 60  
 Gly Leu Asn Arg Tyr Asp Gly Leu Ser Phe Arg Lys Phe Lys His Asp  
 65 70 75 80  
 Ala Ala Asn Pro Arg Ser Ile Gly Thr Val Leu Ser Leu Arg Phe Thr  
 85 90 95  
 Lys Ile Ser Met Val Asn Ile Trp Ser Val Leu Met Gln Glu Tyr Ile  
 100 105 110  
 Phe Thr Ile Leu Arg Arg Arg Leu Leu Arg Asn Ser Ile Ala Arg Ala  
 115 120 125  
 Trp Arg Arg Gln Gly  
 130

&lt;210&gt; 7899

&lt;211&gt; 127

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7899

Glu Ala Arg Phe Ile Ile Ser Leu Leu Met Trp Lys Glu Leu Leu Arg  
 1 5 10 15  
 Ile Val Lys His Lys Ile Asn His Ser Asn Lys Pro Arg Leu Met Lys  
 20 25 30  
 Arg Thr Lys Glu Asn Tyr Pro Ser Phe Asn Leu Phe Ser Ile Val Gly  
 35 40 45  
 Thr Trp Glu Ser Ile Asn Leu Asn Pro Thr Val Ile Ile Tyr Arg Asn  
 50 55 60  
 Asp Asn Asp Tyr Leu Leu Ser Ile Ile Tyr Val Ser Glu Thr Thr Lys  
 65 70 75 80  
 Gln Ala Ser Pro Ala Thr Tyr Glu Ile Gln Lys Glu Gly Ser Leu Tyr  
 85 90 95  
 Phe Ile Ala Pro Ala Pro Lys Arg Val Tyr Ile Asp Tyr Asp Pro Val  
 100 105 110

Lys Asp Val Leu Asn Leu Ser Ser Leu Gly Asp Tyr Leu Arg Asn  
 115 120 125

<210> 7900

<211> 107

<212> PRT

<213> B.fragilis

<400> 7900

Ser Asp Met Ser Thr Ile Glu Leu Thr Glu Trp Glu Leu Ala Ile Arg  
 1 5 10 15  
 Glu Gln Leu Ile Lys Ala Ala Ser Glu Gly Lys Thr Leu Tyr Tyr Ser  
 20 25 30  
 Asp Leu Val Lys Glu Lys Asp Val Ser Leu Val Arg Ser Leu Gly Thr  
 35 40 45  
 Val Leu Glu Arg Ile Thr Arg Tyr Asp Ile Glu Asn Lys Gln Pro Ile  
 50 55 60  
 Leu Ala Ser Ile Ala Val Leu Asn Ser Thr Gly Leu Pro Ser Glu Gly  
 65 70 75 80  
 Phe Phe Glu Leu Cys Asp Thr Leu Asp Ile Ser Ala Arg Leu Ser Asp  
 85 90 95  
 Leu Gln Gln Ser Cys Phe Glu Tyr Trp Lys Gln  
 100 105

<210> 7901

<211> 203

<212> PRT

<213> B.fragilis

<400> 7901

Asn Ile Gln Ser Pro Thr Lys Lys Tyr Met Asp Lys Phe Ser Tyr Ala  
 1 5 10 15  
 Ile Gly Leu Gly Ile Gly Gln Asn Leu Leu Gly Met Gly Ala Lys Gly  
 20 25 30  
 Ile Ala Val Asp Asp Phe Ala Gln Ala Ile Lys Asp Val Leu Glu Gly  
 35 40 45  
 Asn Gln Thr Ala Ile Ser His Gln Glu Ala Arg Glu Ile Val Asn Lys  
 50 55 60  
 Tyr Phe Glu Glu Leu Glu Thr Lys Met Asn Ala Ala Asn Ile Glu Gln  
 65 70 75 80  
 Gly Lys Ala Phe Leu Glu Glu Asn Lys Lys Arg Pro Asn Val Val Thr  
 85 90 95  
 Leu Pro Ser Gly Leu Gln Tyr Glu Val Ile Thr Glu Gly Thr Gly Lys  
 100 105 110  
 Lys Ala Gln Ala Thr Asp Gln Val Lys Cys His Tyr Glu Gly Thr Leu  
 115 120 125  
 Ile Asp Gly Thr Leu Phe Asp Ser Ser Ile Lys Arg Gly Gln Pro Ala  
 130 135 140  
 Val Phe Gly Val Asn Gln Val Ile Pro Gly Trp Val Glu Ala Leu Gln  
 145 150 155 160  
 Leu Met Pro Glu Gly Ser Lys Trp Lys Leu Phe Ile Pro Ser Glu Leu  
 165 170 175  
 Ala Tyr Gly Ala Gln Gly Ala Gly Glu Met Ile Pro Pro His Ser Thr  
 180 185 190  
 Leu Val Phe Glu Val Glu Leu Ile Glu Val Leu  
 195 200

<210> 7902

<211> 499

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7902

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Leu Lys Lys Ser Ile Ala Phe Ala Leu Leu Leu Arg Met Phe Tyr Leu
1      5      10      15
Cys Thr Thr Leu Tyr Phe Lys Gln Phe Thr Phe Met Ser Thr Glu Leu
20      25      30
Phe Ser Thr Leu Pro Tyr Lys Val Ala Asp Ile Thr Leu Ala Asp Phe
35      40      45
Gly Arg Lys Glu Ile Asp Leu Ala Glu Lys Glu Met Pro Gly Leu Met
50      55      60
Ala Leu Arg Glu Lys Tyr Gly Glu Ser Lys Pro Leu Lys Gly Ala Arg
65      70      75      80
Ile Met Gly Ser Leu His Met Thr Ile Gln Thr Ala Val Leu Ile Glu
85      90      95
Thr Leu Val Ala Leu Gly Ala Glu Val Arg Trp Cys Ser Cys Asn Ile
100     105     110
Tyr Ser Thr Gln Asp His Ala Ala Ala Ile Ala Ala Ser Gly Val
115     120     125
Ala Val Phe Ala Trp Lys Gly Glu Thr Leu Ala Asp Tyr Trp Trp Cys
130     135     140
Thr Leu Gln Ala Leu Asn Phe Glu Gly Gly Lys Gly Pro Thr Val Ile
145     150     155     160
Val Asp Asp Gly Gly Asp Ala Thr Met Met Ile His Val Gly Tyr Glu
165     170     175
Ala Glu Asn Asn Ala Ala Val Leu Asp Lys Glu Val His Ala Glu Asp
180     185     190
Glu Ile Glu Leu Asn Ala Ile Leu Lys Lys Val Leu Ala Glu Asp Lys
195     200     205
Glu Arg Trp His Arg Val Ala Ala Glu Val Arg Gly Val Ser Glu Glu
210     215     220
Thr Thr Thr Gly Val His Arg Leu Tyr Gln Met Gln Glu Glu Gly Lys
225     230     235     240
Leu Leu Phe Pro Ala Phe Asn Val Asn Asp Ser Val Thr Lys Ser Lys
245     250     255
Phe Asp Asn Leu Tyr Gly Cys Arg Glu Ser Leu Ala Asp Gly Ile Lys
260     265     270
Arg Ala Thr Asp Val Met Ile Ala Gly Lys Val Val Val Cys Gly
275     280     285
Tyr Gly Asp Val Gly Lys Gly Cys Ser His Ser Met Arg Ser Tyr Gly
290     295     300
Ala Arg Val Leu Val Thr Glu Val Asp Pro Ile Cys Ala Leu Gln Ala
305     310     315     320
Ala Met Glu Gly Phe Glu Val Val Thr Met Glu Asp Ala Cys Lys Glu
325     330     335
Gly Asn Ile Phe Val Thr Thr Thr Gly Asn Ile Asp Ile Ile Arg Ile
340     345     350
Asp His Met Glu Gln Met Lys Asp Gln Ala Ile Val Cys Asn Ile Gly
355     360     365
His Phe Asp Asn Glu Ile Gln Val Asp Ala Leu Lys His Tyr Pro Gly
370     375     380
Ile Lys Arg Val Asn Ile Lys Pro Gln Val Asp Arg Tyr Tyr Phe Pro
385     390     395     400
Asp Gly His Ser Ile Ile Leu Leu Ala Asp Gly Arg Leu Val Asn Leu
405     410     415
Gly Cys Ala Thr Gly His Pro Ser Phe Val Met Ser Asn Ser Phe Thr
420     425     430
Asn Gln Thr Leu Ala Gln Ile Glu Leu Phe Asn Lys Lys Tyr Asp Ile

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435                      440                      445  
 Asn Val Tyr Arg Leu Pro Lys His Leu Asp Glu Glu Val Ala Arg Leu  
 450                      455                      460  
 His Leu Glu Lys Ile Gly Val Lys Leu Thr Lys Leu Thr Pro Glu Gln  
 465                      470                      475                      480  
 Ala Ala Tyr Ile Gly Val Ser Val Asp Gly Pro Tyr Lys Ala Asp His  
 485                      490                      495  
 Tyr Arg Tyr

<210> 7903  
 <211> 120  
 <212> PRT  
 <213> B.fragilis

<400> 7903  
 Lys Ile Phe Pro Ala Ile His Cys Gly Ile Lys Asp Asn Ala Tyr Leu  
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 Cys Thr Leu Lys Glu Thr Phe Tyr Arg Ser Ile Ile Leu Leu Ile Met  
 20                      25                      30  
 Tyr Leu Asp Ala Ala Lys Lys Gln Glu Ile Phe Ser Lys Tyr Gly Lys  
 35                      40                      45  
 Ser Asn Thr Asp Thr Gly Ser Ala Glu Ala Gln Ile Ala Leu Phe Ser  
 50                      55                      60  
 Tyr Arg Ile Thr His Leu Thr Glu His Met Lys Leu Asn Arg Lys Asp  
 65                      70                      75                      80  
 Tyr Ser Thr Glu Arg Ala Leu Thr Met Leu Val Gly Lys Arg Arg Ala  
 85                      90                      95  
 Leu Leu Asp Tyr Leu Lys Ala Lys Asp Ile Thr Arg Tyr Arg Asp Ile  
 100                      105                      110  
 Ile Lys Glu Leu Gly Leu Arg Lys  
 115                      120

<210> 7904  
 <211> 532  
 <212> PRT  
 <213> B.fragilis

<400> 7904  
 Lys Ser Val Leu Ser Val Val Lys Leu Lys Pro Asn Glu Leu Glu Thr  
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 20                      25                      30  
 Gly Leu Gly Ser Pro Gln Ala Phe Ala His Lys Glu Lys Ala His Thr  
 35                      40                      45  
 Pro Gln Lys Pro Asn Ile Ile Phe Ile Met Cys Asp Asp Met Gly Tyr  
 50                      55                      60  
 Gly Asp Leu Gly Cys Tyr Gly Gln Pro Tyr Ile Ser Thr Pro Asn Ile  
 65                      70                      75                      80  
 Asp Asn Met Ala Arg Glu Gly Met Arg Phe Thr Gln Ala Tyr Ala Gly  
 85                      90                      95  
 Ser Pro Val Ser Ala Pro Ser Arg Ala Ser Leu Met Thr Gly Gln His  
 100                      105                      110  
 Thr Gly His Cys Glu Val Arg Gly Asn Lys Glu Tyr Trp Thr Gln Ala  
 115                      120                      125  
 Ser Thr Val Met Tyr Gly Asp Asn Lys Glu Phe Ser Val Val Gly Gln  
 130                      135                      140  
 His Pro Tyr Asp Pro Glu His Val Ile Leu Pro Glu Ile Met Lys Asp  
 145                      150                      155                      160

Asn Gly Tyr Thr Thr Gly Met Phe Gly Lys Trp Ala Gly Gly Tyr Glu  
 165 170 175  
 Gly Ser Ala Ser Thr Pro Asp Lys Arg Gly Ile Asp Glu Tyr Tyr Gly  
 180 185 190  
 Tyr Ile Cys Gln Phe Gln Ala His Leu Tyr Tyr Pro Asn Phe Leu Asn  
 195 200 205  
 Arg Tyr Ser Pro Ser Leu Gly Asp Thr Gly Val Val Arg Val Val Met  
 210 215 220  
 Glu Glu Asn Ile Lys Tyr Pro Met Tyr Gly Pro Asp Tyr His Lys Arg  
 225 230 235 240  
 Thr Gln Tyr Ser Ala Asp Leu Ile His Gln Lys Ala Met Glu Trp Ile  
 245 250 255  
 Glu Lys Gln Asp Gly Glu Gln Pro Phe Phe Gly Ile Phe Thr Tyr Thr  
 260 265 270  
 Leu Pro His Ala Glu Leu Val Gln Pro Glu Asp Ser Ile Leu Asn His  
 275 280 285  
 Tyr Lys Thr Gln Phe Ala Asp Asp Lys Ala Phe Gly Gly Gln Lys Gly  
 290 295 300  
 Ser Arg Tyr Asn Ala Ile Thr His Val His Ala Gln Phe Ala Gly Met  
 305 310 315 320  
 Ile Thr Arg Leu Asp Tyr Tyr Val Gly Glu Val Leu Lys Lys Leu Glu  
 325 330 335  
 Glu Lys Gly Phe Asp Glu Asn Thr Ile Val Ile Phe Thr Ser Asp Asn  
 340 345 350  
 Gly Pro His Glu Glu Gly Gly Ala Asp Pro Thr Phe Phe Gly Arg Asp  
 355 360 365  
 Gly Lys Leu Arg Gly Leu Lys Arg Gln Cys Tyr Glu Gly Gly Ile Arg  
 370 375 380  
 Val Pro Phe Ile Val Arg Trp Pro Gly Gln Val Ala Ala Gly Thr Val  
 385 390 395 400  
 Asn Asp His Gln Cys Ala Phe Tyr Asp Val Met Pro Thr Leu Cys Asp  
 405 410 415  
 Leu Thr Gly Val Lys Asn Phe Thr Lys Lys Tyr Val Asn Lys Lys Lys  
 420 425 430  
 Glu Ala Asp Tyr Phe Asp Gly Ile Ser Phe Ala Pro Thr Ile Leu Gly  
 435 440 445  
 Lys Lys Asn Gln Lys Lys His Asp Phe Leu Tyr Trp Glu Phe Asn Glu  
 450 455 460  
 Thr Asn Gln Ile Gly Val Arg Met Gly Asp Trp Lys Met Val Val Lys  
 465 470 475 480  
 Lys Gly Thr Pro Phe Leu Tyr Asn Leu Ala Thr Asp Ile His Glu Asp  
 485 490 495  
 His Asn Val Ala Ala Glu Asn Pro Asp Ile Val Lys Lys Met Val Gly  
 500 505 510  
 Ile Ile His Gln Gln His Thr Glu Asn Pro Asn Phe Lys Val Thr Leu  
 515 520 525  
 Pro Pro Thr Met  
 530

&lt;210&gt; 7905

&lt;211&gt; 60

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7905

Ser Thr Ser Thr Pro Phe Asn Gly Leu Phe Arg Gln Ser Ala Ala Leu  
 1 5 10 15  
 Ser Leu Leu Arg Leu His Ile Thr Pro Thr Gly Ser Thr Gly Ile Leu  
 20 25 30

Thr Cys Ser Ala Ile Gly Leu Thr Val Arg Leu Ser Leu Arg Thr Arg  
 35 40 45  
 Leu Thr Leu Ile Arg Leu Ala Leu Ile Arg Lys Pro  
 50 55 60

<210> 7906  
 <211> 452  
 <212> PRT  
 <213> B.fragilis

<400> 7906

Phe Tyr Phe Thr Phe Asn Tyr Lys Ile Met Ser Ser Asn Ser Thr Asn  
 1 5 10 15  
 Ile Asp Pro Ala Ile Leu Thr Ser Ile Leu Gly Glu Lys Arg Ala Ser  
 20 25 30  
 Glu Lys Tyr Ala Lys Leu Gly Ile Lys Tyr Asn Pro Phe Pro Arg Ser  
 35 40 45  
 Gly Thr Thr Asn Ile Asn Gly Asn Asp Ile Tyr Asn Arg Phe Met Ile  
 50 55 60  
 Pro Ile Asp Pro Val Val Leu Gly Gln Leu Asn Met Phe Ile Ser Asn  
 65 70 75 80  
 Ser Leu Ala Asn Asn Glu Ile Asp Asn Thr Asp Lys Phe Ile Ser Ala  
 85 90 95  
 Thr Val Leu Gly Asn Tyr Gly Ser Gly Lys Thr Gln Leu Leu Met Tyr  
 100 105 110  
 Thr Arg Phe Leu Leu Asn Met Ile Ala Thr Ser Ser Asp Tyr Glu Ala  
 115 120 125  
 Thr Pro Tyr Val Ile Tyr Ile Asp Asn Pro Gly Val Ser Leu Leu Glu  
 130 135 140  
 Phe Ile Gly Asn Ile Ile Ala Arg Ile Gly Glu Glu Asn Leu Arg Lys  
 145 150 155 160  
 Tyr Leu Trp Asn Asn Ile Ile Asn Val Ile Asp Asn Glu Tyr Glu Tyr  
 165 170 175  
 Lys Asn Ile Leu Leu Pro Tyr Val Asn Asn Thr Ile Leu Leu Phe Asp  
 180 185 190  
 Thr Glu Asn Lys Asp Pro Phe Ala Glu Asn Arg Val Ser Tyr Lys  
 195 200 205  
 Gln Phe Leu Thr Val Phe Thr Gln Asn Ile Thr Thr Thr Asp Lys Arg  
 210 215 220  
 Lys Lys Phe Asp Leu Glu Phe Arg Asn Leu Leu Leu Lys Val Leu Asp  
 225 230 235 240  
 Tyr Tyr Thr Lys Asp Ser Val Val Ser Tyr Tyr Phe Tyr Glu Phe Ile  
 245 250 255  
 Ser Gly Asp Tyr Gly Val Asn Lys Thr Trp Glu Ala Leu Thr Ser Gly  
 260 265 270  
 Ser Leu Lys Gln Leu Lys Gly Lys Glu Ala Arg Val Ile Lys Tyr Ile  
 275 280 285  
 Val Lys Leu Val Lys Glu Gln Gly Phe Ser Asp Phe Phe Ile Leu Val  
 290 295 300  
 Asp Glu Phe Glu Asp Ile Thr Glu Gly Arg Leu Thr Lys Ser Gln Ile  
 305 310 315 320  
 Asp Asn Tyr Val Tyr Asn Leu Arg Thr Leu Leu Asp Glu Gln Arg Glu  
 325 330 335  
 Trp Cys Leu Met Phe Thr Met Thr Pro Leu Ala Leu Lys Lys Leu Arg  
 340 345 350  
 Ser Val Ser Pro Pro Leu Ala Asp Arg Ile Ser Ser Arg Glu Ile Trp  
 355 360 365  
 Leu Gln Asp Leu Asn Thr Glu Gln Ala Ile Ser Ile Val Lys Asn Tyr  
 370 375 380

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

Met Thr Ile Val Glu His Asp Ser Leu Leu Pro Phe Thr Glu Asp Gly  
 385 390 395 400  
 Ile Ala Tyr Leu Val Asp Ile Val Asp Gly Asn Ile Arg Arg Phe Leu  
 405 410 415  
 Lys Met Cys Phe Arg Leu Ile Glu Glu Ala Ala Leu Thr Phe Thr Ser  
 420 425 430  
 Pro Asp Asn Lys Ile Asn Lys Ala Phe Ile Glu Ser Gln Asn Leu Leu  
 435 440 445  
 Glu Gln Glu Ser  
 450

<210> 7907  
 <211> 113  
 <212> PRT  
 <213> B.fragilis

<400> 7907  
 Pro His Thr Thr Thr Thr Leu Pro Ala Ile Ile Thr Ser Val Ala Arg  
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 Leu Met Pro Ser Ala Asn Asp Ser Arg Gln Pro Tyr Arg Leu Ser Asn  
 20 25 30  
 Leu Asp Leu Val Thr Glu Ser Phe Thr Leu Lys Ala Gly Asn Asn Asn  
 35 40 45  
 Leu Pro Ser Ser Cys Ile Trp Tyr Arg Arg Cys Thr Pro Val Val Val  
 50 55 60  
 Ser Ser Glu Thr Pro Arg Thr Ser Ala Ala Thr Arg Cys Gln Arg Ser  
 65 70 75 80  
 Leu Ser Ser Ala Ser Thr Phe Phe Ser Ile Ala Phe Asn Ser Ile Ser  
 85 90 95  
 Ser Ser Ala Cys Thr Ser Leu Ser Asn Thr Ala Ala Leu Phe Ser Ala  
 100 105 110  
 Ser

<210> 7908  
 <211> 78  
 <212> PRT  
 <213> B.fragilis

<400> 7908  
 Val Arg Ser Thr Ser Val Pro Phe Lys Ser Ser Ile Ile Thr Glu Phe  
 1 5 10 15  
 Phe Phe Thr Thr Val Ser Val Ser Asp Asp Glu Met Ile Pro Thr Ser  
 20 25 30  
 Val Thr Thr Pro Ile Met Asn Lys Thr Met Pro Asp Asn Thr Met Pro  
 35 40 45  
 Val Thr Val Ala Ser Val Asn Leu Lys Lys Ser Phe Ile Val His Ile  
 50 55 60  
 Val Phe Met Pro Ala Leu Leu Lys Leu Thr Lys Ile Asn Asn  
 65 70 75

<210> 7909  
 <211> 329  
 <212> PRT  
 <213> B.fragilis

<400> 7909  
 Ile Tyr Arg Thr Met His Ile Asp Phe Ala Pro Pro Ser Lys Gly Thr  
 1 5 10 15



Tyr Asn Asn Ala Gly Ser Ser Arg Gln Leu Ala Ser Tyr Met Glu His  
 20 25 30  
 Glu Asp Leu Glu Arg Met Glu Lys Gly Ile Tyr Thr Asp Gly Phe Phe  
 35 40 45  
 Asn Leu Val Asp Asp Asn Ile Tyr Lys Ser Met Val Ile Lys Asp Ile  
 50 55 60  
 Asp Ser Asn Ile Gly Gln Leu Leu Lys Thr Asp Ala Lys Phe Tyr Ala  
 65 70 75 80  
 Thr His Val Ser Pro Ser Glu Lys Glu Leu Arg Ala Met Gly Ser Thr  
 85 90 95  
 Glu Lys Glu Gln Ala Glu Ala Met Lys Arg Tyr Ile Arg Glu Val Phe  
 100 105 110  
 Ile Pro Glu Tyr Ala Lys Asn Phe Asn Lys Glu Leu Ser Ala Ser Asp  
 115 120 125  
 Ile Lys Phe Tyr Gly Lys Ile His Phe Asp Arg Asn Arg Ser Asp Asn  
 130 135 140  
 Gly Leu Asn Met His Cys His Leu Ile Ile Ser Arg Lys Asp Gln Ala  
 145 150 155 160  
 Asn Lys Lys Lys Leu Ser Pro Leu Thr Asn His Lys Asn Thr Lys Asn  
 165 170 175  
 Gly Val Ile Lys Gly Gly Phe Ala Arg Val Asn Leu Phe Gln Gln Ala  
 180 185 190  
 Glu Gln Gly Phe Asp Lys Leu Phe Gly Tyr Asp Arg Gln Gln Ser Glu  
 195 200 205  
 Ser Phe Asp Tyr His Asn Thr Met Lys Asn Gly Ser Ile Ser Glu Gln  
 210 215 220  
 Thr Lys Leu Gln Glu Gln Asp Ile Gln Ser Ser Asp Arg Lys Ala Gly  
 225 230 235 240  
 Ile Asn Gln Gly Ser Asn Gln Glu Asn Leu Leu Ser Ile Asn Leu Val  
 245 250 255  
 Asn Lys Arg Ile Asn Asn Gln Ala Ser Ser Ile Asp Thr His Ile Val  
 260 265 270  
 Ile Lys Gln Lys Asp Asn Ala Tyr Ser Thr Ser Ser Phe Asn Gln Glu  
 275 280 285  
 Thr Asn Gln Ile Phe Gly Ser Phe Ile Ser Ser Ala Ala Gln Asp Ile  
 290 295 300  
 Arg Ser Ser Ser Asn His Glu Asp Gln Thr Leu Lys Ser Lys Lys Lys  
 305 310 315 320  
 Lys Lys Lys Glu Arg Ile Asn Lys Leu  
 325

<210> 7910  
 <211> 64  
 <212> PRT  
 <213> B.fragilis

<400> 7910  
 Leu Gln Met Thr Cys Leu Phe Asp Thr Thr Ser Lys Asn Tyr Trp Thr  
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 Ser Phe Pro Asn Gly Phe Ser Ser Ser Tyr Asn Ser Pro Ile Leu Cys  
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 Ile Glu Phe Asn Glu Glu Tyr Gly Val Ile Ile Gln Ile Ile His Leu  
 35 40 45  
 Ile Tyr Lys Glu Phe Leu Arg Lys Ser Leu Ser Leu His Val Pro Lys  
 50 55 60

<210> 7911  
 <211> 682  
 <212> PRT

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Asn	Glu	Lys	Thr	Leu	Met	Lys	Met	Ile	Leu	Lys	Thr	Met	Val	Cys	Leu
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Ala	Val	Ala	Phe	Ser	Gly	Thr	Ala	Gly	Ala	Ala	Asn	Tyr	Ser	Pro	Glu
		20						25					30		
Lys	Ser	Gln	Ala	Ser	Leu	Ala	Leu	Lys	Val	Pro	Gly	Asn	Pro	Ala	Val
		35					40					45			
Glu	Tyr	Pro	Leu	Thr	Leu	Ser	Lys	Leu	Ser	Asp	Ser	Tyr	Phe	Asp	Tyr
	50					55				60					
Glu	Trp	Lys	Ala	Lys	Glu	Lys	Ile	Pro	Val	Thr	Ile	Phe	Gln	Gln	Ile
65					70					75					80
Ser	Thr	Val	Asp	Asp	Lys	Gln	Gln	Val	Thr	Val	Val	Leu	Thr	Ala	Met
			85					90						95	
Glu	Asp	Val	Tyr	Phe	Asn	Phe	Glu	Glu	Arg	Ile	Arg	Thr	Asp	Phe	Arg
		100						105					110		
His	Asp	Asp	Cys	Gln	Phe	Tyr	Leu	Pro	Gly	Phe	Trp	Tyr	Arg	Arg	Asn
		115					120					125			
Leu	Arg	Ser	Pro	Lys	Glu	Ala	Pro	Ser	Phe	His	Thr	Ser	Asp	Ser	Trp
	130					135					140				
Val	Val	Arg	Glu	Asp	Arg	Leu	Ser	Thr	Pro	Leu	Thr	Gly	Ile	Phe	Asp
145					150					155					160
Glu	Lys	Gln	Lys	Lys	Tyr	Met	Thr	Val	Val	Arg	Arg	Ala	Glu	Tyr	Ile
				165					170					175	
Gln	Asp	Ala	Leu	Ser	Thr	His	Lys	Glu	Gly	Glu	Val	Ile	Leu	Ser	Gly
		180						185					190		
Thr	Thr	Ser	Leu	Gly	Phe	Thr	Gly	Phe	Glu	Asn	Leu	Asp	Gly	Thr	Ala
		195					200					205			
Ala	Leu	Ala	Phe	Gly	Phe	Pro	Tyr	Lys	Glu	Ala	Pro	Lys	Thr	Tyr	Ile
	210					215					220				
Arg	Lys	Leu	Thr	Leu	Ala	Pro	Ser	Val	Thr	Ala	Phe	Gln	Leu	Leu	Lys
225					230					235					240
Lys	Gly	Glu	Ser	Ile	Ser	Leu	Thr	Trp	Glu	Ile	His	Glu	Gly	Lys	Gly
				245					250					255	
Glu	Asp	Phe	Ala	Glu	Phe	Val	Ser	His	Thr	Trp	Glu	Tyr	Cys	Tyr	Asp
		260						265					270		
Thr	Phe	Gln	Pro	Lys	Pro	Val	Glu	Thr	Asp	Tyr	Thr	Pro	Asp	Tyr	Thr
		275					280					285			
Lys	Glu	Ile	Leu	Ser	His	Phe	Phe	Ile	Glu	Ser	Phe	Val	Gly	Asp	Arg
	290				295						300				
Pro	Leu	Asn	Tyr	Asn	Ser	Gly	Val	His	Met	Arg	Thr	Asp	Asp	Cys	Gln
305					310					315					320
Asn	Thr	Gly	Ser	Ala	Glu	Val	Gly	Phe	Val	Gly	Arg	Val	Leu	Leu	Asn
				325					330					335	
Ala	Phe	Asn	Ala	Trp	Glu	Tyr	Gly	Trp	Lys	Asn	Asn	Arg	Ala	Asp	Leu
		340						345					350		
Lys	Glu	Asn	Ala	Ala	Lys										

Ile Val Asp Lys Ser Gly Gly Ser Thr Pro Ser Ala Thr Leu Pro Leu  
 450 455 460  
 Val Met Gly Tyr Lys Tyr Phe Lys Asp Lys Arg Tyr Leu Glu Ser Ala  
 465 470 475 480  
 Lys Arg Thr Ala Glu Tyr Leu Glu Lys Glu Leu Ile Ser Lys Ser Asp  
 485 490 495  
 Tyr Phe Ser Ser Thr Leu Asp Ala Asn Cys Glu Asp Lys Glu Ala Ser  
 500 505 510  
 Leu Tyr Ala Ala Thr Ala Thr Tyr Tyr Leu Ala Leu Val Ser Gln Gly  
 515 520 525  
 Lys Glu Arg Glu His Tyr Thr Gly Leu Thr Lys Lys Ala Ala Tyr Phe  
 530 535 540  
 Ala Leu Ser Trp Tyr Tyr Leu Trp Asp Val Pro Phe Ala Pro Gly Gln  
 545 550 555 560  
 Met Leu Gly Asp Ile Gly Leu Lys Thr Arg Gly Trp Gly Asn Val Ser  
 565 570 575  
 Val Glu Asn Asn His Ile Asp Val Phe Ile Phe Glu Phe Ala Ser Ile  
 580 585 590  
 Leu Asn Trp Leu Ser Lys Glu Tyr Ser Glu Pro Arg Phe Ser Gln Phe  
 595 600 605  
 Ala Glu Val Ile Ser Thr Ser Met Arg Gln Leu Leu Pro Tyr Glu Gly  
 610 615 620  
 His Leu Cys Gly Val Ala Lys Cys Gly Tyr Tyr Pro Glu Val Val Gln  
 625 630 635 640  
 His Thr Asn Trp Asp Tyr Gly Lys Asn Gly Lys Gly Tyr Tyr Asn Asp  
 645 650 655  
 Ile Phe Ala Pro Gly Trp Thr Val Ala Ser Leu Trp Glu Leu Phe Ser  
 660 665 670  
 Pro Gly Arg Ala Glu Gln Phe Phe Leu Ile  
 675 680

&lt;210&gt; 7912

&lt;211&gt; 323

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7912

Ile Arg Tyr Phe Lys Met Lys Thr Asp Phe Ile Gln Ile Ala Ser Tyr  
 1 5 10 15  
 Ala Ser Lys Ala Pro Ser Gly His Asn Thr Gln Pro Trp Lys Phe His  
 20 25 30  
 Ile Thr Asp Ser Thr Ile Thr Val Leu Pro Asn Leu Asn Val Ala Leu  
 35 40 45  
 Pro Val Val Asp Arg Asn Asn Arg Glu Leu Phe Ile Ser Leu Gly Cys  
 50 55 60  
 Ala Val Glu Asn Leu Cys Ile Ala Ala Ser Tyr Phe Gly Tyr Thr Thr  
 65 70 75 80  
 His Ile Ile Glu Cys Ser Ile Glu Ala Ile Ile Leu Glu Leu Thr Lys  
 85 90 95  
 Asn Asp Leu Thr Ile Glu Asp Pro Leu Phe His Gln Ile Glu Lys Arg  
 100 105 110  
 Gln Thr Asn Arg Asn Ile Tyr Asn Gly Asn Lys Ile Ser Asn Gly Ile  
 115 120 125  
 Leu Gln Gln Leu Gln Ser Ile Pro Lys Glu Asn Gly Ile Gln Phe Tyr  
 130 135 140  
 Phe Thr Glu Ile Asn Thr Pro Phe Ala Asn Thr Ile Thr Gln Tyr Ile  
 145 150 155 160  
 Met Lys Gly Asn Glu Ile Gln Met Ala Asp Ile Ala Phe Lys Asn Glu  
 165 170 175

Leu Leu Ser Trp Met Arg Phe Asn Lys Lys Gln Val Glu Ala Thr His  
 180 185 190  
 Asn Gly Leu Ser Tyr Leu Val Phe Gly Asn Pro Pro Leu Pro Arg Ile  
 195 200 205  
 Leu Ala Arg Pro Ile Val Ser Leu Phe Leu Lys Pro Asn Ala Gln Asn  
 210 215 220  
 Lys Ser Asp Arg Lys Lys Ile Asp Ser Ser Ser His Phe Val Val Cys  
 225 230 235 240  
 Thr Thr Gln Arg Asp Thr Ile Glu Glu Trp Ile Asn Leu Gly Arg Thr  
 245 250 255  
 Leu Gln Arg Phe Leu Leu Lys Val Thr Glu Ile Gly Ile Ala Tyr Ala  
 260 265 270  
 Phe Leu Asn Gln Pro Cys Glu Val Ala Ala Leu Ala Phe Asp Leu Arg  
 275 280 285  
 Glu Lys Leu Pro Val Asn Lys Glu His Pro Thr Leu Ile Met Arg Ile  
 290 295 300  
 Gly Tyr Ala Lys Gln Ile Pro Tyr Ser Pro Arg Lys Lys Ile Glu Thr  
 305 310 315 320  
 Leu Leu Val

<210> 7913  
 <211> 261  
 <212> PRT  
 <213> B.fragilis

<400> 7913  
 Ile Cys Lys Ala Phe Phe His Val Ser Phe Glu Arg Trp Gly Val Arg  
 1 5 10 15  
 Pro Val Tyr Leu Lys Ile Lys Ala Ser Met Lys Asn Leu Val Val Leu  
 20 25 30  
 Ser Gly Ala Gly Met Ser Ala Glu Ser Gly Ile Ser Thr Phe Arg Asp  
 35 40 45  
 Ala Gly Gly Leu Trp Asp Arg Tyr Pro Val Glu Gln Val Ala Thr Pro  
 50 55 60  
 Glu Gly Tyr Ala Arg Asp Pro Glu Leu Val Thr His Phe Tyr Asn Glu  
 65 70 75 80  
 Arg Arg Lys Gln Leu Leu Glu Val Glu Pro Asn Arg Gly His Glu Leu  
 85 90 95  
 Leu Ala Glu Leu Glu Lys Asp Phe Arg Val Thr Ile Val Thr Gln Asn  
 100 105 110  
 Ile Asp Asn Leu His Glu Arg Ala Gly Ser Arg His Ile Ile His Leu  
 115 120 125  
 His Gly Glu Leu Thr Lys Val Cys Ser Ser Arg Asp Pro Asn Asn Pro  
 130 135 140  
 His Tyr Ile Lys Glu Leu Lys Pro Glu Glu Phe Glu Val Lys Ile Gly  
 145 150 155 160  
 Asp Leu Ala Gly Asp Gly Ser Gln Leu Arg Pro Phe Ile Val Trp Phe  
 165 170 175  
 Gly Glu Ser Val Pro Glu Ile Glu Thr Ala Ile Asp Trp Val Glu Lys  
 180 185 190  
 Ala Asp Val Phe Val Ile Ile Gly Thr Ser Met Asn Val Tyr Pro Ala  
 195 200 205  
 Ala Gly Leu Leu Asn Tyr Val Pro Arg Asn Ala Glu Ile Tyr Leu Ile  
 210 215 220  
 Asp Pro Lys Pro Val Asp Val His Ser Ser Arg Pro Ile His Val Ile  
 225 230 235 240  
 Gln Lys Gly Ala Ser Glu Gly Val Ala Glu Leu Arg Glu Arg Leu Leu  
 245 250 255

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Thr Thr Asn His Ala  
260

<210> 7914  
<211> 262  
<212> PRT  
<213> B.fragilis

<400> 7914

Lys Tyr Leu Tyr Cys Met Asn Lys Met Asn Val Ala Ile Ile Glu Asp  
1 5 10 15  
Glu Ile Pro Ala Ala Arg Leu Leu His Ser Met Val Ser Gly Leu Arg  
20 25 30  
Pro Gln Trp Glu Leu Thr Leu Ile Pro Gly Ser Val Asp Glu Ala Val  
35 40 45  
Ala Trp Phe Asp Glu His Pro His Pro Asp Leu Ile Phe Leu Asp Ile  
50 55 60  
His Leu Ala Asp Gly Asn Ala Phe Asp Phe Leu Ser Ala Ala His Pro  
65 70 75 80  
Ser Ser Val Ile Ile Phe Thr Thr Ala Tyr Asp Gln Tyr Ala Ile Arg  
85 90 95  
Ala Phe Thr Val Asn Ser Ile Asp Tyr Ile Leu Lys Pro Ile Asp Glu  
100 105 110  
Lys Arg Leu Ser Asp Ala Ile Thr Lys Tyr Glu Ser Leu Leu Thr Asn  
115 120 125  
Ala Val Pro Arg Pro Glu Asp Tyr Leu Gly Thr Leu Phe Glu Ala Leu  
130 135 140  
Gln Tyr Lys Glu Lys Arg Tyr Arg Thr Arg Phe Leu Ile Ser Gly Val  
145 150 155 160  
Asp Arg Phe Trp Ser Leu Gln Val Ala Asp Ile Ala Tyr Phe Tyr Ser  
165 170 175  
Glu Asn Lys Val Thr Phe Ala Val Thr Arg Lys Gly Gln Glu His Ile  
180 185 190  
Leu Asp Leu Ser Leu Asn Lys Leu Met Glu Gln Leu Asp Pro Glu Arg  
195 200 205  
Phe Phe Arg Ala Asn Arg Gln Val Leu Val Cys Ile Asp Ala Ile Asp  
210 215 220  
His Ala Glu Pro Phe Phe Asn Gly Lys Ile Val Val Thr Val Arg Pro  
225 230 235 240  
Pro Tyr Lys Gln Lys Ile Thr Ile Ser Glu Glu Lys Leu Ser Ala Phe  
245 250 255  
Lys Leu Trp Leu Asn His  
260

<210> 7915  
<211> 353  
<212> PRT  
<213> B.fragilis

<400> 7915

Ile Leu Pro Tyr His Lys Ile Arg Tyr Met Arg Thr Glu Ile Ala Thr  
1 5 10 15  
Leu Gly Glu Phe Gly Leu Ile Lys His Leu Thr Glu Gly Ile Lys Leu  
20 25 30  
Glu Asn Glu Ser Ser Lys Tyr Gly Val Gly Asp Asp Ala Ala Val Leu  
35 40 45  
Ser Tyr Pro Ala Asp Lys Gln Val Leu Val Thr Thr Asp Leu Leu Met  
50 55 60  
Glu Gly Val His Phe Asp Leu Thr Tyr Thr Pro Leu Lys His Leu Gly

65		70		75		80									
Tyr	Lys	Ser	Ala	Val	Val	Asn	Phe	Ser	Asp	Ile	Tyr	Ala	Met	Asn	Gly
			85						90					95	
Thr	Pro	Lys	Gln	Ile	Thr	Ala	Ser	Leu	Ala	Leu	Ser	Lys	Arg	Phe	Ser
			100					105					110		
Val	Glu	Asp	Met	Asp	Glu	Phe	Tyr	Ser	Gly	Leu	Arg	Leu	Ala	Cys	Gln
		115					120					125			
Gln	Tyr	Lys	Val	Asp	Ile	Val	Gly	Gly	Asp	Thr	Thr	Ser	Ser	Leu	Thr
		130				135					140				
Gly	Phe	Ala	Ile	Ser	Ile	Thr	Cys	Ile	Gly	Glu	Ala	Asp	Lys	Asp	Lys
145					150					155					160
Val	Val	Tyr	Arg	Asn	Gly	Ala	Lys	Asp	Thr	Asp	Leu	Ile	Cys	Val	Ser
			165					170						175	
Gly	Asp	Leu	Gly	Ala	Ala	Tyr	Met	Gly	Leu	Gln	Leu	Leu	Glu	Arg	Glu
		180						185					190		
Lys	Ala	Val	Phe	Lys	Gly	Glu	Gln	Asp	Ala	Gln	Pro	Asp	Phe	Ser	Gly
		195					200					205			
Lys	Glu	Tyr	Leu	Leu	Glu	Arg	Gln	Leu	Lys	Pro	Glu	Ala	Arg	Lys	Asp
		210				215					220				
Ile	Ile	Glu	Lys	Leu	Ser	Ala	Ala	Asn	Ile	Val	Pro	Thr	Ser	Met	Met
225					230					235					240
Asp	Ile	Ser	Asp	Gly	Leu	Ser	Ser	Glu	Leu	Leu	His	Ile	Cys	Thr	Gln
			245					250						255	
Ser	Lys	Ala	Gly	Cys	Arg	Val	Tyr	Glu	Glu	His	Ile	Pro	Ile	Asp	Tyr
		260						265					270		
Gln	Thr	Ala	Val	Met	Ala	Glu	Glu	Phe	Asn	Met	Asn	Leu	Thr	Thr	Cys
		275					280					285			
Ala	Met	Asn	Gly	Gly	Glu	Asp	Tyr	Glu	Leu	Leu	Phe	Thr	Val	Pro	Ile
		290				295					300				
Ala	Asp	His	Glu	Lys	Val	Ser	Glu	Met	Glu	Gly	Val	Arg	Leu	Ile	Gly
305					310					315					320
His	Ile	Thr	Lys	Pro	Glu	Leu	Gly	Cys	Ala	Leu	Ile	Thr	Arg	Asp	Gly
			325					330						335	
Gln	Glu	Phe	Glu	Leu	Lys	Ala	Gln	Gly	Trp	Asn	Pro	Leu	Gln	Glu	Asn
		340						345					350		

Lys

&lt;210&gt; 7916

&lt;211&gt; 440

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7916

Lys	Ala	Asn	Tyr	Glu	Gly	Gly	Tyr	Arg	Ile	Asn	Ile	Leu	Ile	Phe	Ala
1				5					10					15	
Tyr	Ile	Lys	Lys	Ile	Lys	Met	Asp	Phe	Leu	His	Ser	Glu	Ile	Gly	Ser
		20					25						30		
Ala	Lys	Asp	Asn	Phe	Tyr	Ser	Pro	Val	His	Asn	Trp	Tyr	Lys	Phe	Thr
		35				40					45				
Ala	Gly	Phe	Ser	Tyr	Lys	Phe	Val	Glu	Ala	Ile	Leu	Glu	Gly	Glu	Lys
	50					55				60					
Asn	Ser	Gln	Asn	Ile	Val	Phe	Glu	Pro	Phe	Ala	Gly	Cys	Gly	Thr	Thr
65				70					75						80
Leu	Val	Ser	Ser	Gln	Lys	Cys	Gly	Val	Lys	Ala	Ile	Gly	Asn	Glu	Gly
			85					90					95		
Gln	Glu	Phe	Met	Leu	Asp	Ile	Ile	Lys	Ala	Lys	Leu	Tyr	Trp	Asn	Ile
		100					105					110			
Asp	Lys	Thr	Glu	Cys	Ile	Asn	Ser	Leu	Asn	Tyr	Ile	Asp	Ser	Tyr	Ile

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      115              120              125
Lys Glu His Leu Thr Asn Phe Ser Met Glu Glu Val His Pro Leu Leu
  130              135              140
Ser Thr Leu Tyr Asp Asn Glu Thr Leu Lys Val Leu Tyr Leu Thr Arg
  145              150              155              160
Asp Ser Leu Asp His Ile Ser Asn Asp Lys Ile Arg Leu Phe Leu Lys
      165              170              175
Leu Ala Leu Ser Gln Thr Met His Lys Val Gly Leu Tyr Pro Ile Ala
      180              185              190
Val Pro Tyr Ile Ser Arg Thr Lys Arg Met Ala Asn Ser Gly His Ala
      195              200              205
Phe Ala Arg Phe Gln Ser Ile Val Leu Gln Met Leu Glu Asp Ile Gly
      210              215              220
Pro Leu Gln Asn Ile Glu Gln Thr Ser Glu Ile Tyr Leu His Asp Ser
  225              230              235              240
Arg Phe Glu Asn Pro Asn Ile Gly Asp Ser Ile Cys Asn Tyr Cys Ile
      245              250              255
Thr Ser Pro Pro Tyr Leu Asn Asn Leu Asp Tyr Gly Glu Val Ser Lys
      260              265              270
Val His Thr His Phe Phe Gly Leu Thr Glu Asn Trp Asn Asp Ile Thr
      275              280              285
Gln Lys Val Arg Lys Asn Leu Val Thr Gly Ala Thr Thr His Tyr Arg
      290              295              300
Asp Ile Asp Phe Asp Ile Asn Ile Phe Lys Glu Asn Asp Phe Ser Lys
  305              310              315              320
Glu Asn Gln Leu Val Phe Asp Glu Leu Phe Thr Ser Tyr Ile Gln Ile
      325              330              335
Met Glu Ile Ala Lys Thr Arg Asn Gly Lys Lys Ser Phe Asn Ile Leu
      340              345              350
Met Met His Tyr Phe Glu Asp Met Tyr Tyr Val Leu Lys Glu Met Arg
      355              360              365
Arg Val Leu Lys Lys Gly Ser Lys Ala Tyr Leu Ile Leu Gly Asp Ser
      370              375              380
Ala Pro Tyr Gly Ile Tyr Ile Pro Thr Thr Glu Leu Leu Gly Arg Ile
  385              390              395              400
Ala Tyr Ser Val Gly Phe Asn Lys Tyr His Ile Tyr Lys Ile Arg Thr
      405              410              415
Arg Gly Thr Lys Trp Lys Ser Leu Lys Tyr Arg His Asn Ile Glu Leu
      420              425              430
Ser Glu Asn Val Leu Val Leu Glu
      435              440

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&lt;210&gt; 7917

&lt;211&gt; 167

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7917

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Thr Arg Ile Leu Tyr Met Lys Lys Lys Asn Glu Gln Trp Leu Arg Tyr
1              5              10              15
Ser Asn Arg Ala Leu Ser Gly Leu Leu Met Leu Phe Gly Phe Val Ser
      20              25              30
Cys Asp Asn Gly Gly Gly Asp Ile Pro Val Glu Tyr Gly Met Pro Ser
      35              40              45
Ala Lys Tyr Arg Val Lys Gly Lys Val Ile Asp Ala Asp Thr Gln Glu
      50              55              60
Pro Val Pro Gly Ile Glu Val Val Thr Gly Ala Val His Thr Gly Asp
  65              70              75              80
Gly Lys Glu Trp Leu Ser Tyr Pro Asp Thr Leu Ile Thr Asp Lys Asp

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85 90 95  
 Gly Ala Phe Ala Thr Glu Arg Thr Glu Phe Pro Ser Lys Lys Tyr Arg  
 100 105 110  
 Phe Ile Val Arg Asp Val Asp Gly Asp Ala Asn Gly Thr Tyr Ser Lys  
 115 120 125  
 Asp Ser Val Glu Val Glu Ala Gly Gly Phe Thr Gly Gly Ser His Trp  
 130 135 140  
 Tyr Arg Gly Glu Thr Ser Ile Asp Lys Thr Ile Glu Ile Lys Lys Glu  
 145 150 155 160  
 Thr Ala Lys Asp Asn Glu Lys  
 165

<210> 7918  
 <211> 112  
 <212> PRT  
 <213> B.fragilis

<400> 7918  
 Ser Lys Met Tyr Ile Asp Asn Glu Asn Phe Glu Lys Trp Met Glu Lys  
 1 5 10 15  
 Leu Ser Lys Lys Leu Thr Glu Ile Gly Lys Asp Leu Lys Ser Leu Ile  
 20 25 30  
 Asn Thr Asp Lys Val Leu Asp Asp Asn Glu Lys Ile Leu Asp Asn Gln  
 35 40 45  
 Asp Leu Ala Phe Leu Leu Lys Val Ser Phe Arg Thr Leu Gln Arg Tyr  
 50 55 60  
 Arg Val Ser Gly Leu Leu Pro Phe Phe Thr Ile Gly Lys Lys Thr Tyr  
 65 70 75 80  
 Tyr Arg Ala Gly Asp Ile Arg Ser Phe Val Arg Glu Arg Ala Asp Phe  
 85 90 95  
 Gln Ala Tyr Lys Gln Phe Glu Lys Ala Asn Gln Leu Glu Asn Gln Pro  
 100 105 110

<210> 7919  
 <211> 232  
 <212> PRT  
 <213> B.fragilis

<400> 7919  
 Lys Lys Asp Leu Ser Leu Cys Leu Glu Ile Leu Ser Ile Thr Arg Lys  
 1 5 10 15  
 Thr Met Asn Met Asn Lys Lys Ile Met Gln Lys Gly Trp Leu Tyr Glu  
 20 25 30  
 Tyr Glu Val Gly Glu Glu Tyr Arg Arg Asn Tyr Asn Cys Glu Leu Thr  
 35 40 45  
 Asp Val Arg Tyr Val Leu Gly Glu Gln Phe Asp Met Asp Lys Gln Ser  
 50 55 60  
 Ala Leu Ile Cys Ile Gly Ile Asn Pro Ser Met Ala Met Pro Asn Phe  
 65 70 75 80  
 Leu Asp Pro Thr Leu Lys Arg Val Gln Glu Tyr Ala Lys Arg Ser Gly  
 85 90 95  
 Glu Tyr Gly Ala Trp Tyr Met Leu Asn Val Tyr Pro Gln Arg Ala Thr  
 100 105 110  
 Asn Pro Asn Asn Met Asp Thr Asp Asp Asn Tyr Asn Met Glu Ile His  
 115 120 125  
 Leu Arg Asn Leu Val Ala Ile Lys Lys Met Leu Ser Thr Ile Asp Asn  
 130 135 140  
 Ala Asp Val Trp Cys Ala Trp Gly Ala Thr Ile Ser Asp Pro Lys Arg  
 145 150 155 160



Thr Tyr Leu Ser Asp Leu Leu Phe Gly Asn Glu Asn Lys Asn Ile Gln  
                           165                          170                          175  
 Gly Ile Ile Gly Leu Phe Asn Gly Asn Tyr His Phe Lys Ala Tyr Gly  
                           180                          185                          190  
 Ala Thr Thr Lys Gly Tyr Pro Lys His Pro Leu Leu Ile Gly Lys Gly  
                           195                          200                          205  
 Ala Lys Leu Lys Thr Leu Asn Glu Val Glu Leu Lys Glu Leu Ser Asp  
                           210                          215                          220  
 Arg Ile Thr Asn Ile Ile Lys Lys  
                           225                          230

<210> 7920  
 <211> 180  
 <212> PRT  
 <213> B.fragilis

<400> 7920

Gln Ser Ile His Arg Lys Ser Lys Phe Ile Arg Thr Gly Ile Ile Met  
 1                          5                          10                          15  
 Glu Ser Trp Ser Gln Thr Pro Ile Lys Asp Phe Lys Val Ser Phe Phe  
                           20                          25                          30  
 Leu Asp Thr Asn Ile Leu Cys Tyr Leu Val Asp Ser Thr Tyr Pro Asn  
                           35                          40                          45  
 Leu Asn Lys Phe Ile Asn Tyr Leu Gly Asn Asn Pro Phe Ser Asp Val  
                           50                          55                          60  
 Ile Ser Ser Asp Tyr Val Leu Leu Glu Phe Ile Gly Ile Arg Lys Arg  
 65                          70                          75                          80  
 Glu His Tyr Leu Arg Ala Val Leu Lys Lys Gly Glu Gln Asp Gly Gln  
                           85                          90                          95  
 Ser Val Asn Leu Ser Ser Leu Leu Lys Phe His Asn Gln Tyr Ser Ala  
                           100                          105                          110  
 Pro Glu Val Asp Phe Ile Ser Ile Ile Pro Gln Ile Lys Glu Ser Val  
                           115                          120                          125  
 Asp His Asp Glu Glu Glu Ile Thr Thr Gln Tyr Asn Ile Asp Phe Asn  
 130                          135                          140  
 Cys Lys Phe His Ile Asp Leu Phe Glu Pro Thr Lys Asn Ile Cys Leu  
 145                          150                          155                          160  
 Val Ser Leu Lys Ser Ala Thr Ile Ile Gln Tyr Thr Ile Lys Gly Arg  
                           165                          170                          175  
 Phe Met Ser Arg  
                           180

<210> 7921  
 <211> 613  
 <212> PRT  
 <213> B.fragilis

<400> 7921

Ile Ser Thr Gln Leu Phe Ile Phe Val Ser Phe Lys Arg Ala Gly Ile  
 1                          5                          10                          15  
 Lys Thr Ile Cys Thr Met Lys Asp Phe Phe Lys Phe Thr Leu Ala Thr  
                           20                          25                          30  
 Val Thr Gly Ile Val Leu Ser Gly Ile Val Leu Phe Ile Ile Gly Val  
                           35                          40                          45  
 Val Thr Leu Val Gly Ile Ile Ser Ser Ser Asp Thr Glu Thr Val Val  
                           50                          55                          60  
 Lys Lys Asn Ser Val Met Met Leu Asp Leu Lys Gly Thr Leu Val Glu  
 65                          70                          75                          80  
 Arg Thr Gln Glu Ser Leu Glu Gly Leu Leu Gly Lys Phe Thr Gly Glu

				85						90					95		
Thr	Ala	Asp	Thr	Tyr	Gly	Leu	Asp	Asp	Ile	Leu	Ala	Ser	Ile	Lys	Lys		
			100					105					110				
Ala	Lys	Glu	Asn	Asp	Asn	Ile	Lys	Gly	Ile	Tyr	Ile	Gln	Ala	Ser	Trp		
		115					120					125					
Leu	Asn	Ala	Ser	Tyr	Ala	Ser	Leu	Gln	Ala	Ile	Arg	Lys	Ala	Leu	Asp		
	130					135					140						
Asp	Phe	Lys	Glu	Ser	Gly	Lys	Phe	Ile	Val	Ala	Tyr	Ser	Asp	Asn	Tyr		
	145				150					155				160			
Thr	Gln	Gly	Leu	Tyr	Leu	Ser	Ser	Val	Ala	Asp	Lys	Val	Met	Leu			
			165					170					175				
Asn	Pro	Lys	Gly	Met	Ile	Glu	Trp	Arg	Gly	Leu	Ala	Ser	Ala	Pro	Ile		
			180					185					190				
Phe	Tyr	Lys	Asp	Leu	Leu	Gln	Lys	Leu	Gly	Ile	Glu	Met	Gln	Val	Phe		
	195					200					205						
Lys	Val	Gly	Thr	Tyr	Lys	Ser	Ala	Val	Glu	Pro	Phe	Thr	Ala	Thr	Glu		
	210					215					220						
Met	Ser	Pro	Ala	Asn	Arg	Lys	Gln	Val	Thr	Ala	Phe	Ile	Gly	Ser	Ile		
	225				230					235				240			
Trp	Asn	Gln	Ile	Leu	Asp	Gly	Val	Ser	Ala	Ser	Arg	Lys	Ile	Gly	Lys		
			245					250					255				
Asp	Ser	Leu	Asn	Met	Tyr	Ala	Asp	Arg	Met	Leu	Met	Phe	Tyr	Pro	Ser		
		260						265					270				
Asp	Glu	Ser	Val	Lys	Cys	Arg	Leu	Ala	Asp	Thr	Leu	Ile	Tyr	Gln	Asn		
		275					280					285					
Asp	Val	Arg	Asp	Tyr	Leu	Lys	Thr	Leu	Val	Lys	Ile	Asp	Glu	Asp	Asp		
	290					295					300						
Arg	Leu	Pro	Ile	Leu	Gly	Leu	Glu	Glu	Met	Val	Asn	Ile	Lys	Lys	Asn		
	305				310					315					320		
Val	Pro	Lys	Asp	Lys	Ser	Gly	Asn	Ile	Leu	Ala	Val	Tyr	Tyr	Ala	Ser		
			325					330					335				
Gly	Glu	Ile	Thr	Asp	Tyr	Ala	Gly	Ser	Ala	Ala	Ser	Asp	Glu	Gly	Ile		
			340					345					350				
Ile	Gly	Ser	Lys	Met	Ile	Arg	Asp	Leu	Arg	Lys	Leu	Lys	Glu	Asp	Asp		
	355						360					365					
Asp	Val	Lys	Ala	Val	Val	Leu	Arg	Val	Asn	Ser	Pro	Gly	Gly	Ser	Ala		
	370					375					380						
Phe	Ala	Ser	Glu	Gln	Ile	Trp	His	Ala	Val	Lys	Glu	Leu	Lys	Ala	Lys		
	385				390					395				400			
Lys	Pro	Val	Ile	Val	Ser	Met	Gly	Asp	Tyr	Ala	Ala	Ser	Gly	Gly	Tyr		
			405					410					415				
Tyr	Ile	Ser	Cys	Ala	Ala	Asp	Ser	Ile	Ile	Ala	Glu	Pro	Thr	Thr	Leu		
			420					425					430				
Thr	Gly	Ser	Ile	Gly	Ile	Phe	Gly	Met	Ile	Pro	Asn	Val	Lys	Gly	Leu		
	435						440					445					
Thr	Glu	Lys	Ile	Gly	Leu	Thr	Tyr	Asp	Val	Val	Lys	Thr	Asn	Gln	Phe		
	450					455					460						
Ser	Asp	Phe	Gly	Asn	Leu	Met	Arg	Pro	Val	Asn	Ser	Asp	Glu	Arg	Ala		
	465				470					475				480			
Leu	Leu	Gln	Met	Met	Ile	Gly	Gln	Gly	Tyr	Asp	Leu	Phe	Val	Ser	Arg		
			485					490					495				
Cys	Ala	Glu	Gly	Arg	His	Met	Ser	Lys	Asp	Lys	Ile	Glu	Lys	Ile	Ala		
		500						505				510					
Glu	Gly	Arg	Val	Trp	Thr	Gly	Glu	Met	Ala	Lys	Lys	Ile	Gly	Leu	Val		
	515						520					525					
Asp	Glu	Leu	Gly	Gly	Ile	Gly	Lys	Ala	Leu	Glu	Ile	Ala	Ala	Gln	Lys		
	530					535					540						
Ala	Asp	Leu	Lys	Gly	Tyr	Thr	Ile	Ile	Ser	Tyr	Pro	Ala	Lys	Lys	Asp		
	545				550				555					560			

100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290 300 310 320 330 340 350 360 370 380 390 400 410 420 430 440 450 460 470 480 490 500 510 520 530 540 550 560

[illegible]

<400> 7922

Ser 1	Tyr	Asn	Gln	Lys 5	Met	Lys	Asp	Met	Arg	Leu	Cys	Phe	Ser	Val	Cys
Asn	Arg	Arg	Phe	Leu	Thr	Gly	Val	Ile	Met	Phe	Met	Leu	Leu	Tyr	Pro
			20					25					30		
Met	Ser	Val	Phe	Ala	Val	Gln	Gly	Gln	Ile	Ala	Val	Gln	Gly	Lys	Ala
			35				40					45			
Met	Ser	Ile	Lys	Gln	Ala	Ile	Gln	Val	Ile	Glu	Lys	Asn	Ser	Lys	Tyr
			50			55					60				
Thr	Phe	Phe	Tyr	Lys	Ala	Ala	Asp	Leu	Ser	Asn	Ala	Lys	Ile	Arg	Asp
65				70						75				80	
Ile	His	Cys	Glu	Gly	Ser	Ile	Glu	Glu	Val	Leu	Asn	Val	Leu	Phe	Lys
				85				90						95	
Asp	Ser	Gly	Ile	Ser	Tyr	Val	Ile	Lys	Asp	Asn	Glu	Val	Ile	Leu	Lys
			100					105					110		
Ser	Thr	Pro	Val	Val	Val	Ala	Thr	Pro	Gln	Gln	Ser	Asn	Lys	Ile	Val
			115				120						125		
Val	Lys	Gly	Asn	Ile	Arg	Asp	Thr	Leu	Gly	Glu	Ser	Val	Ile	Gly	Ala
			130			135					140				
Thr	Ile	Met	Glu	Lys	Asn	Asn	Ala	Gln	Asn	Gly	Ser	Ile	Ser	Asp	Ile
145				150						155				160	
Asn	Gly	Asp	Phe	Ser	Leu	Ser	Val	Ser	Pro	Gly	Ala	Val	Ile	Val	Ile
			165						170					175	
Ser	Tyr	Ile	Gly	Tyr	Val	Thr	Gln	Glu	Leu	Lys	Ala	Ile	Ala	Gly	Ala
			180					185					190		
Pro	Leu	Lys	Val	Val	Leu	Lys	Asp	Asp	Ser	Arg	Thr	Leu	Asp	Glu	Val
			195				200					205			
Val	Val	Val	Gly	Phe	Gly	Ser	Gln	Lys	Lys	Ala	Asn	Leu	Thr	Gly	Ala
			210			215					220				
Val	Ser	Ser	Ile	Lys	Met	Asp	Glu	Ile	Ile	Gly	Asp	Arg	Pro	Ile	Met
225				230						235				240	
Thr	Ala	Ser	Asp	Ala	Leu	Gln	Gly	Thr	Val	Pro	Gly	Leu	Leu	Val	Ser
			245						250					255	
Asn	Ser	Gly	Asn	Ala	Pro	Gly	Ser	Gly	Lys	Ser	Phe	Gln	Leu	Arg	Gly
			260					265					270		
Ala	Tyr	Ser	Val	Gly	Ile	Lys	Asn	Ser	Asp	Gly	Ser	Tyr	Gly	Ala	Asn
			275				280					285			
Val	Ala	Pro	Leu	Ile	Leu	Ile	Asp	Asn	Val	Glu	Gly	Ser	Leu	Asp	Met
			290			295					300				
Leu	Asn	Pro	Glu	Asp	Ile	Glu	Thr	Val	Thr	Val	Leu	Lys	Asp	Ala	Ala
305				310						315				320	
Ser	Ala	Ala	Ile	Tyr	Gly	Ala	Arg	Ala	Ala	Gly	Gly	Val	Val	Leu	Val
			325						330					335	
Thr	Thr	Lys	Arg	Pro	Lys	Glu	Ala	Thr	Ala	Phe	Arg	Leu	Asn	Tyr	Asn
			340					345					350		

Asn Asn Phe Gly Phe Ala Thr Ala Thr Asn Leu Pro Lys Gln Ala Ser  
 355 360 365  
 Leu Met Asp Tyr Leu Gln Ala Tyr Gln Asp Gly Gly Tyr Ser Asp Ala  
 370 375 380  
 Tyr Trp Ser Tyr Gly Ser Pro Ser Val Ser Lys Trp Lys Glu Tyr Leu  
 385 390 395 400  
 Thr Gln Tyr Arg Gln Asp Pro Ser Ser Ile Lys Thr Val Gly Asp Gly  
 405 410 415  
 Ile Phe Ala Asp Thr Asp Gly Ala Leu Tyr Tyr Leu Asn Glu His Asp  
 420 425 430  
 Pro Tyr Lys Asn Phe Met Glu Thr Ser Phe Gln Met Asn His Asn Leu  
 435 440 445  
 Ser Val Ser Gly Gly Thr Asp Lys Leu Arg Tyr Arg Met Ser Ala Gly  
 450 455 460  
 Tyr Val Ser Thr Asp Gly Val Leu Ile Thr Asp Lys Asp Thr Tyr Glu  
 465 470 475 480  
 Arg Leu Asn Ile Asn Ser Tyr Ile Ser Ala Asp Ile Thr Lys Trp Phe  
 485 490 495  
 Thr Gln Glu Leu Thr Met Ser Tyr Ala Arg Thr Asn Gln Ser Gln Pro  
 500 505 510  
 Asn Ser Gly Leu Gly Ser Met Phe Gly Ser Asn Gln Val Ser Tyr Gln  
 515 520 525  
 Pro Glu Gly Asn Met Pro Ser Asp Val Cys Ser Thr Ile Ser Gln Asp  
 530 535 540  
 Leu Pro Phe Asn Thr Pro Arg Asn Gln Val Leu Leu Ala Asn Lys Trp  
 545 550 555 560  
 Lys Lys Ser Tyr Asp Asn Pro Arg Val Phe Val Lys Ser Ile Leu Lys  
 565 570 575  
 Pro Phe Lys Gly Phe Glu Ala Val Phe Glu Tyr Thr Phe Asp Lys Asn  
 580 585 590  
 Met Tyr Asp Tyr Asn Phe Tyr Thr Gly Lys Thr Gln Tyr Thr Asp Ile  
 595 600 605  
 Gln Gly Gly Asn Asn Ile Trp Asn Ala Ala Lys Asp Tyr Leu Gln Lys  
 610 615 620  
 Glu Lys Gln Phe Thr Asp Tyr Asn Ala Phe Asn Ile Tyr Gly Thr Tyr  
 625 630 635 640  
 Lys Phe Asp Leu Asn Lys Asp His His Phe Ser Val Met Ala Gly Phe  
 645 650 655  
 Asn Gln Glu Ser Lys Tyr Thr Glu Gly Val Asn Val Leu Ser Tyr Asn  
 660 665 670  
 Gln Ala Val Val Glu Val Pro Ala Leu Gly Ser Gly Thr Gly Asp Leu  
 675 680 685  
 Lys Ala Thr Asp Ser Tyr Asn Glu Tyr Ser Val Arg Gly Gly Phe Phe  
 690 695 700  
 Arg Val Asn Tyr Asn Tyr Met Asp Lys Tyr Leu Leu Glu Val Asn Gly  
 705 710 715 720  
 Arg Tyr Asp Gly Ser Ser Lys Phe Pro Lys Asp Ser Arg Phe Gly Phe  
 725 730 735  
 Phe Pro Ser Val Ser Leu Gly Trp Asn Val Ala Gln Glu Lys Phe Met  
 740 745 750  
 Glu Val Thr Arg Asn Tyr Ile Asp Gly Leu Lys Ile Arg Ala Ser Tyr  
 755 760 765  
 Gly Val Ile Gly Asn Gln Asn Val Val Asn Tyr Ala Tyr Phe Pro Thr  
 770 775 780  
 Met Ser Val Ser Asn Lys Tyr Asn Gly Trp Leu Ser Gly Gly Asp Tyr  
 785 790 795 800  
 Val Thr Ala Ile Asn Ser Leu Pro Asn Leu Val Ser Thr Ser Phe Thr  
 805 810 815  
 Trp Glu Lys Val Ala Thr Thr Asp Ile Gly Leu Asp Leu Asn Met Phe

820					825					830					
Gly	Asn	Arg	Met	Asn	Val	Val	Phe	Asp	Trp	Tyr	Gln	Arg	Asp	Thr	Lys
835					840					845					
Gly	Met	Leu	Ala	Pro	Gly	Met	Gln	Leu	Pro	Ala	Val	Val	Gly	Ala	Ser
850					855					860					
Ser	Pro	Phe	Gln	Asn	Thr	Ala	Asp	Met	Arg	Thr	Arg	Gly	Trp	Glu	Leu
865					870					875					
Ala	Val	Asn	Trp	Arg	Asp	Arg	Ile	Gly	Lys	Phe	Asn	Tyr	Arg	Val	Gly
885					890					895					
Phe	Asn	Leu	Ser	Asp	Ser	Tyr	Ser	Glu	Ile	Thr	Lys	Tyr	Asp	Asp	Asn
900					905					910					
Ala	Ala	Ser	Lys	Leu	Leu	Ser	Asn	Phe	Tyr	Pro	Gly	Gln	Arg	Leu	Gly
915					920					925					
Glu	Ile	Trp	Gly	Tyr	Glu	Val	Asp	Gly	Phe	Tyr	Thr	Val	Asp	Asp	Phe
930					935					940					
Val	Asp	Thr	Asn	Ser	Trp	Lys	Leu	Lys	Asp	Gly	Val	Ala	Ser	Ile	Lys
945					950					955					
Gly	Val	Ser	Pro	Arg	Pro	Gly	Asp	Leu	Lys	Phe	Lys	Asn	Leu	Arg	Asp
965					970					975					
Asp	Asp	Lys	Ser	Thr	Asn	Gln	Ile	Asp	Ser	Gly	Asp	Gly	Thr	Leu	Asp
980					985					990					
Asn	Pro	Gly	Asp	Gln	Lys	Val	Ile	Gly	Asn	Ser	Leu	Pro	Lys	Tyr	Leu
995					1000					1005					
Tyr	Gly	Ile	Thr	Leu	Gly	Ala	Asn	Tyr	Lys	Gly	Phe	Asp	Leu	Asn	Ile
1010					1015					1020					
Met	Met	Gln	Gly	Thr	Gly	Gln	Arg	Asp	Ala	Trp	Ile	Ala	Asn	Asn	Leu
1025					1030					1035					
Val	Phe	Pro	Met	Tyr	Ile	Tyr	Ser	Val	Asn	Asp	Ile	Lys	Tyr	Gln	Pro
1045					1050					1055					
Leu	Phe	Asp	Gly	Leu	Thr	Asp	Tyr	Trp	Arg	Pro	Val	Asp	Ala	Ala	Asn
1060					1065					1070					
Gly	Asp	Tyr	Thr	Ala	Val	Asn	Pro	Asn	Ala	Lys	Tyr	Pro	Arg	Met	Tyr
1075					1080					1085					
Gly	Gln	Asn	Pro	Thr	Val	Gly	Ser	Asn	Tyr	Gly	Arg	Lys	Thr	Asp	Lys
1090					1095					1100					
Tyr	Leu	Ser	Asn	Ala	Ala	Tyr	Phe	Arg	Ile	Lys	Asn	Val	Thr	Leu	Ser
1105					1110					1115					
Tyr	Thr	Val	Pro	Lys	Thr	Trp	Ile	Ser	Arg	Ile	Gly	Leu	Asn	Gln	Leu
1125					1130					1135					
Lys	Gly	Phe	Val	Ser	Val	Glu	Asn	Leu	Ala	Thr	Phe	Ser	Ser	Leu	Pro
1140					1145					1150					
Ser	Gly	Ile	Asp	Pro	Glu	Thr	Leu	Ser	Trp	Asn	Tyr	Pro	Ala	Phe	Arg
1155					1160					1165					
Thr	Val	Ser	Phe	Gly	Ile	Asn	Phe	Thr	Leu						
1170					1175										

&lt;210&gt; 7923

&lt;211&gt; 656

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7923

Thr	His	Asn	Gln	Glu	Leu	Lys	Met	Lys	Lys	Ile	Tyr	Leu	Ser	Leu	Ala
1				5					10					15	
Ile	Leu	Ala	Gly	Ile	Gly	Leu	Ala	Gly	Cys	Asn	Asp	Ser	Phe	Leu	Glu
			20					25					30		
His	Ala	Pro	Val	Thr	Ser	Leu	Thr	Glu	Asn	Asn	Ala	Phe	Arg	Ser	Tyr
		35					40					45			
Asp	Asn	Phe	Lys	Ser	Phe	Ala	Trp	Pro	Cys	Tyr	Glu	Ile	Phe	Lys	Asp

50	55	60
Asn Asn Ile Ala Asn Thr Ile Asn Gly Thr Gly Gln Gly Ser Cys Tyr		
65	70	75
Ala Gly Asp Met Asn Ala Gly Tyr Leu Glu Ser Arg Ala Asn Glu Ser		80
	85	90
Gly Asn Asp Tyr Ala Phe Gly Arg Val Gln Ser Val Ala Ser Gly Asn		95
	100	105
Gly Trp Gly Phe Ser Gly Thr Phe Arg Arg Ala Asn Ile Leu Leu Ala		110
	115	120
Asn Ile Asp Lys Ser Glu Met Thr Asp Ala Glu Lys Asp His Trp Arg		125
	130	135
Ala Val Gly Tyr Phe Phe His Ser Tyr Trp Tyr Met Glu Leu Ile Asn		140
	145	150
Arg Phe Gly Ala Val Pro Trp Val Asn Thr Ala Leu Asn Glu Asn Ser		155
	165	170
Pro Glu Ala Tyr Gly Pro Arg Val Asp Arg Glu Ile Val Ala Asp Ser		175
	180	185
Val Leu Asn Arg Leu Lys Trp Ala Glu Ala Asn Ile Gly Asp Phe Glu		190
	195	200
Lys Gln Asp Gly Ala Asn Thr Ile Asn Arg Asp Cys Ile Arg Ala Ala		205
	210	215
Ile Ser Arg Phe Ala Leu Arg Glu Ala Thr Trp Arg Lys Tyr His Gly		220
	225	230
Ile Asp Gly Ala Gln Lys Phe Phe Asp Glu Cys Ile Arg Val Ser Arg		235
	245	250
Leu Leu Met Asn Asp Tyr Pro Thr Leu Tyr Tyr Gly Thr Asp Gly Gln		255
	260	265
Pro Ala Ala Gly Tyr Gly Glu Met Trp Thr Thr Glu Asp Leu Gly Lys		270
	275	280
Val Pro Gly Val Ile Leu Tyr Met Glu Phe Val Gln Asp Ile Lys Met		285
	290	295
Ala Asn Phe Ser Ala Leu Glu His Met Asp Ser His Asn Val Glu Met		300
	305	310
Asn Gln His Thr Val Asp Leu Tyr Leu Cys Lys Asp Gly Lys Pro Ile		315
	325	330
Ala Thr Ser Ala Asn Tyr His Gly Asp Lys Thr Pro Tyr Ala Thr Phe		335
	340	345
Arg Asp Arg Asp Pro Arg Leu Tyr His Val Val Met Pro Pro Tyr Lys		350
	355	360
Val Lys Ala Lys Val Lys Thr Lys Glu Asp Pro Arg Thr Trp Asp Tyr		365
	370	375
Thr Asp Asp Pro Ala Asp Arg Glu Tyr Ile Asp Ile Met Gly Pro Asn		380
	385	390
Glu Ser Cys Asp Asn Pro Gly Ile Gly Met Lys Arg Leu Pro Gly Gln		395
	405	410
Asn Trp Ser Ala Ser Leu Val Pro Ser Ser Pro Asn Phe Met Gly Gly		415
	420	425
Ile Gly Ala Thr Gly Phe Val Arg Ser Arg Ser Gly Tyr Tyr Phe Trp		430
	435	440
Lys Asn Trp Ser Asn Trp Glu Thr Asn Arg Asn Gly Gly Val Thr Leu		445
	450	455
Asn Thr Ser Asp Lys Pro Ile Phe Lys Ile Glu Glu Val Leu Leu Asn		460
	465	470
Tyr Ala Glu Ala Met Cys Glu Thr Gly Gln Phe Thr Gln Ala Val Ala		475
	485	490
Asp Glu Ser Ile Asn Lys Leu Arg Arg Arg Ala Gly Val Ala Asp Met		495
	500	505
Lys Val Ala Asp Ile Asp Asp Ser Phe Asp Pro Asn Arg Gly Arg Tyr		510
	515	520
		525

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Tyr Pro Lys Gly Asn Glu Gln Gly Val Leu Val Asp Pro Val Leu Trp  
 530 535 540  
 Glu Val Arg Arg Glu Arg Ile Val Glu Leu Met Gly Glu Gly Phe Gly  
 545 550 555 560  
 Phe Tyr Asp Ile Arg Arg Trp Arg Met Ala Pro Trp Phe Leu Asn Arg  
 565 570 575  
 Gln Phe Lys Gly Met Trp Met Thr Lys Asp Lys Phe Arg His Gly Ala  
 580 585 590  
 Gln Phe Leu Leu Asn Glu Thr Thr Gly Gly Pro Asp Pro Ala Asp Gly  
 595 600 605  
 Ala Met Thr Glu Gly Tyr Ile Tyr Leu Gln Pro Asp Pro Ile Lys Ala  
 610 615 620  
 Gly Glu Gly Trp Gln Glu Arg Tyr Tyr Leu Tyr Glu Val Pro Thr Gln  
 625 630 635 640  
 Glu Ile Ile Leu Asn Pro Ala Leu Ala Pro Asn Asn Pro Gly Trp Glu  
 645 650 655

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 <212> PRT  
 <213> B.fragilis

<400> 7924  
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 Thr Thr Val Thr Thr Asn Ala Ile Ser Gln Thr Asn Phe Met Gln Lys  
 20 25 30  
 Glu Ile Arg Leu Gln Glu Phe Gln Phe Phe Arg Gln Arg Tyr Gln Cys  
 35 40 45  
 Phe Ile Leu Thr Leu Gln Asn Ile Thr Val Tyr Thr Gly Gln Met Leu  
 50 55 60  
 Gly Glu Met Asn Ser Ile Thr Arg Val Ile Phe Tyr Phe Ser Asn Gln  
 65 70 75 80  
 Arg Ile Glu Thr Ile Lys Gln Lys Met Gly Ile Gln Leu Thr Leu  
 85 90 95

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 <213> B.fragilis

<400> 7925  
 Lys Asn Asn His Ile Val Leu Met Leu Leu Lys Ala Val Leu Lys Asn  
 1 5 10 15  
 Asp Leu Ile Gly Leu Ile Met Leu Arg Met Ala Phe Ser Asp Phe Gly  
 20 25 30  
 His Ile Leu Ser Glu Lys Asp Ile Leu Asn Met Lys Ile His Leu Tyr  
 35 40 45  
 His Phe Tyr Met His Gln Asn Glu Lys Arg Leu Tyr Phe Leu Phe Glu  
 50 55 60  
 Thr Asn  
 65

<210> 7926  
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 <212> PRT  
 <213> B.fragilis

<400> 7926

Arg Ile Asp Gln Asn Tyr Tyr Leu Ala Gln Asn Leu Phe Leu Ser Ser  
 1 5 10 15  
 Leu Leu Leu Phe Leu Ile Val Ile Arg Tyr Ile Cys Ser Tyr Gly Phe  
 20 25 30  
 Tyr Leu Ala Leu Gly Lys Gly Val Leu Ala Pro Val Ile Arg Gly Leu  
 35 40 45  
 Ser Pro Phe Gln Cys Arg Ser Ala Gln Val Leu Ile Pro Phe  
 50 55 60

<210> 7927

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<213> B.fragilis

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Arg Met Lys Gln Leu Tyr Leu Phe Ile Leu Ile Val Phe Cys Cys Met  
 1 5 10 15  
 Gly Cys Gln Arg Asn Thr Leu Arg Gly Pro Ile Pro Thr Ile Ile Met  
 20 25 30  
 His Pro Asp Ser Cys Leu Lys Ser Leu Asp Ile Ser Val Met Met Lys  
 35 40 45  
 Asp Ser Ile Glu Val Ile Lys Leu Glu Thr Thr Asp Ser Cys Leu Ile  
 50 55 60  
 Gly Phe Ile Asn Lys Ile Ser Phe Thr Asp Lys His Ile Leu Val Ser  
 65 70 75 80  
 Asp Ala Arg Val Ser Gln Lys Ile Tyr Leu Phe Asp Lys Gly Gly Lys  
 85 90 95  
 Phe Ile Arg Tyr Ile Ser Asn Lys Gly Thr Gly Pro Gly Glu Tyr Ser  
 100 105 110  
 Val Ile Gly Asp Phe Thr Ile Lys Gly Asp Ser Val Phe Ile Gln Asp  
 115 120 125  
 Tyr Tyr Gln Asn Lys Tyr Val Ile Tyr Asp Met Val Ala Asn Glu Ile  
 130 135 140  
 Lys Asp Asp Ile Pro Tyr Lys Thr His His Ser Gly Val Val Ala Leu  
 145 150 155 160  
 Asp Asn Tyr Leu Tyr Phe Ile Ser Asn Tyr Phe Thr Ser Pro Ile Gly  
 165 170 175  
 Asp Tyr Asn Cys Trp Arg Tyr Asp Leu Ser Thr Arg Lys Thr Glu Gly  
 180 185 190  
 Tyr Leu Pro Phe Thr Val Asp His Ile Ala Asn Gln Pro Ala Trp Thr  
 195 200 205  
 Ile Asn His Pro Cys Gly Gln Ile Asp Lys Leu Lys Ser Phe Ala Tyr  
 210 215 220  
 Tyr Arg Ser Asn Asp Thr Ile Tyr Gln Ile Asp Lys Leu Thr Val Ser  
 225 230 235 240  
 Pro Gln Cys Val Ile His Phe Pro Asn Ser Gly Asp Arg Thr Ser Ser  
 245 250 255  
 Thr Glu Gly Gly His Ile Ser Gly Ile Val His Leu Gln Gln Ser Val  
 260 265 270  
 Gly Tyr Ile Leu Gly Thr Tyr Thr Glu Gly Lys Gly Leu Arg Tyr Phe  
 275 280 285  
 Leu Ile Asp Lys Arg Asn Tyr Ser Ser Gln Met Gly Lys Leu Leu Arg  
 290 295 300  
 Phe Asn Asn Leu Asp Arg Lys Ser Ile Asn Asn Glu Phe Phe Ile Glu  
 305 310 315 320  
 Asp Asn Tyr Leu Ile Phe Trp Asp Thr Met Gln Ser Leu Lys Leu Trp  
 325 330 335  
 Arg Arg Tyr Phe Asp Lys Ala Glu Phe Thr Asn Pro Ala Asp Lys Gln  
 340 345 350



Arg Ile Gln Ser Ile Ile Asp Leu Ser Gln Asp Asp Asp Asn Pro Val  
 355 360 365  
 Ile Phe Arg Cys Arg Val Lys  
 370 375

<210> 7928

<211> 443

<212> PRT

<213> B.fragilis

<400> 7928

Met Ile Met Gln Asp Leu Lys Glu Thr Asn Leu Phe Pro Ile Lys Thr  
 1 5 10 15  
 Leu Pro Glu Ile Phe Arg Thr Ile Ser Glu Ser Leu Phe Leu Ser Phe  
 20 25 30  
 Gly Tyr Pro Leu Ser Tyr Thr Ala Met Ala Ile Ile Ala Ala Val Ala  
 35 40 45  
 Thr Ala Val Gly Thr Thr Val Lys Leu Gln Phe Lys Gln Gly Phe Glu  
 50 55 60  
 Ile Phe Gly Asn Ile Tyr Cys Tyr Phe Ile Ser Asp Pro Gly Thr Cys  
 65 70 75 80  
 Lys Ser His Pro Ile Ser Trp Ala Phe Arg Pro Ile Asp Lys Arg His  
 85 90 95  
 Gln Ser Met Leu Arg Gly Tyr Arg Lys Ala Tyr Glu Ala Tyr Leu Leu  
 100 105 110  
 Lys Thr Ser Gly Asn Lys Asn Lys Asn Val Val Lys Glu Pro Val Phe  
 115 120 125  
 Glu Ala Phe Ile Val Lys Asp Phe Thr Pro Glu Ser Leu Leu Met Gln  
 130 135 140  
 Leu Cys Arg Ser Pro Lys Gly Val Val Ala Ile Ile Asp Glu Leu Ile  
 145 150 155 160  
 Gly Met Phe Lys Asn Ala Asn Arg Tyr Asn Ser Ser Ala Phe Ser Glu  
 165 170 175  
 Phe Leu Asn Glu Val Phe Ser Asn Ile Thr Ile Tyr Lys Thr Arg Ile  
 180 185 190  
 Gly Ser Glu Pro Leu His Cys Leu Ile Pro Tyr Leu Thr Val Ile Gly  
 195 200 205  
 Thr Thr Gln Pro Ser Met Leu Ser Glu Ile Tyr Ser Asn Asp Lys Ser  
 210 215 220  
 Lys Asn Gly Gly Met Ala Arg Phe Ile Pro Ile Phe Pro Lys Asp Leu  
 225 230 235 240  
 Ser Ile Pro Ile Trp Ser Asp Lys Glu His Asp Val Glu Ile Glu Arg  
 245 250 255  
 Val Tyr Ser Glu Met Ile Asp Lys Leu Leu Asp Ile Glu Val Lys Leu  
 260 265 270  
 Asn Glu Glu Gly Asp Pro Thr Pro Arg Thr Ile Glu Phe Thr Ala Glu  
 275 280 285  
 Ala Lys Glu Lys Ile Ile Asp Trp Gln Arg His Tyr Ala Glu Lys Ile  
 290 295 300  
 Glu Ser Glu Asp Arg Gly Gln Thr Tyr Gln Asp Ala Lys Thr Lys Leu  
 305 310 315 320  
 Pro Ile Tyr Leu Leu Lys Phe Ser Leu Leu Asn Gln Met Met Arg Met  
 325 330 335  
 Ile Ala Gly Glu Ser Asn Ala Asp Ala Val Asp Ile Thr Ser Val Asn  
 340 345 350  
 Asn Ala Ile Ala Gln Ile Glu Tyr Ile Asp Gly Glu Ile Leu Lys Val  
 355 360 365  
 His Asp Phe Val Tyr Ser Arg Asn Ile Leu Leu Lys Met Thr Glu Gln  
 370 375 380

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Gln Arg Lys Val Tyr Ala Leu Leu Pro Asn Ser Phe Cys Ile Ser Asp  
 385 390 395 400  
 Val Tyr Asp Leu Val Met Ala Lys Ala Asp Phe Thr Lys Asp Gln Leu  
 405 410 415  
 Lys Lys Phe Val Arg Val Arg Asp Tyr Phe Val Arg Ala Ser Lys Gly  
 420 425 430  
 His Tyr Val Lys Lys Tyr Glu Asp Leu Ser Asp  
 435 440

<210> 7929

<211> 1251

<212> PRT

<213> B.fragilis

<400> 7929

Ser Thr Gln His Trp Asn Ser Phe Ile Thr Ser Leu Tyr Glu Asp Phe  
 1 5 10 15  
 Asn Gly Lys His Leu Val Gly Thr Asp Ala Gly Val Tyr Ile Tyr Tyr  
 20 25 30  
 Pro Glu Lys Glu Ala Phe Glu Glu Phe Asp Cys Gln Ser Leu Glu Lys  
 35 40 45  
 Thr Arg Ile Glu Arg Ser Val Ser Met Ile Ala Gly Asp Lys Gln Gly  
 50 55 60  
 Arg Val Trp Ile Ala Val Glu Ala Gln Gly Met Phe Cys Tyr Asp Ala  
 65 70 75 80  
 Arg Gln Lys Leu Leu Arg Asn Tyr Pro Leu Ser Glu Ile Ser Ser Asn  
 85 90 95  
 Ile Lys Cys Phe Thr Phe Asp Ser Gly Gly Thr Leu Trp Leu Gly Phe  
 100 105 110  
 Tyr Gly Asp Gly Leu Tyr Tyr Ser Lys Asp Asn Leu Ala Thr Val His  
 115 120 125  
 Pro Tyr Gly Ser Pro Glu Asp Gly Lys Arg Glu Phe Glu Gly Gly Val  
 130 135 140  
 Ile Thr Lys Ile Val Gln Gly Asn Tyr Asn Cys Leu Tyr Ile Gly Ser  
 145 150 155 160  
 Val Lys Glu Gly Val Ser Glu Leu Asn Leu Thr Ser Gly Gln Val Arg  
 165 170 175  
 Asn Leu Leu Ala Ile Asp Glu Ser Gly Glu Ser Ile Phe Cys Arg Asp  
 180 185 190  
 Leu Leu Pro Tyr Ser Asp Asn Glu Leu Trp Ile Gly Thr Glu Ser Gly  
 195 200 205  
 Ile Tyr Ile Tyr Asn Leu Arg Thr Ala Gln Phe Ile His Leu Arg Ala  
 210 215 220  
 Ser Leu Tyr Asp Ser Tyr Ser Leu Ser Asp Asn Ala Ile Tyr Ala Leu  
 225 230 235 240  
 Tyr Lys Asp Arg Glu Glu Gly Leu Trp Ile Gly Ser Tyr Phe Gly Gly  
 245 250 255  
 Val Asp Tyr Tyr Pro Arg Gln Tyr Thr Tyr Phe Ala Lys Tyr Tyr Pro  
 260 265 270  
 Lys Asn Ile Ala Asn Ser Leu His Gly Lys Arg Val Arg Glu Phe Cys  
 275 280 285  
 Arg Ala Asp Asp Gly Thr Leu Trp Ile Gly Thr Glu Asp Gly Gly Leu  
 290 295 300  
 Asn His Phe Asn Pro Lys Thr Lys Glu Phe His Phe Phe Glu Pro Ser  
 305 310 315 320  
 Ala Gly Phe Thr Asn Ile His Gly Leu Cys Met Asp Gly Ser His Leu  
 325 330 335  
 Trp Val Gly Thr Phe Ser Lys Gly Leu Arg Val Ile Asp Thr Arg Thr  
 340 345 350

Gly Val Val Leu Arg Thr Tyr Thr Glu Gly His Thr Pro His Ser Leu  
 355 360 365  
 Asn Asp Asn Ser Ile Phe Ser Ile Cys Arg Thr Ser Ala Gly Glu Ile  
 370 375 380  
 Tyr Leu Gly Thr Leu Phe Gly Leu Leu Arg Tyr Asn Arg Thr Gln Asp  
 385 390 395 400  
 Ser Phe Asp Cys Ile Pro Glu Leu Asn Gly Lys Phe Val Tyr Asp Ile  
 405 410 415  
 Lys Glu Asp Ser Tyr Gly Asn Leu Trp Leu Ala Thr Tyr Ala Asn Gly  
 420 425 430  
 Ala Tyr Cys Tyr Asp Val Ser Ala Arg Arg Trp Lys Asn Tyr Val Phe  
 435 440 445  
 Asp Ala Glu Asp Glu Arg Ser Leu Pro Tyr Asp Lys Val Leu Ser Val  
 450 455 460  
 Phe Glu Asp Ser Tyr Arg Gln Ile Trp Leu Thr Thr Gln Gly Gly Gly  
 465 470 475 480  
 Phe Cys Leu Phe His Pro Asp Thr Glu Thr Phe Thr Arg Tyr Gly Leu  
 485 490 495  
 Lys Asp Gly Leu Pro Asn Asp Val Val Tyr Gln Ile Val Glu Asp Asp  
 500 505 510  
 Asp Arg Phe Leu Trp Leu Thr Thr Asn Asn Gly Leu Val Arg Phe Asp  
 515 520 525  
 Pro Lys Thr Met Glu Met Lys Val Phe Ser Thr Ala Asn Gly Leu Pro  
 530 535 540  
 Thr Asn Gln Phe Asn Tyr Arg Ser Gly Phe Lys Asp Glu Ala Gly Asn  
 545 550 555 560  
 Ile Tyr Leu Gly Ser Ile Asn Gly Phe Val Ala Phe Asp Pro Arg Thr  
 565 570 575  
 Phe Ala Glu Asn Arg Gln Val Pro Ala Val Ala Ile Thr Asp Phe Leu  
 580 585 590  
 Leu Phe Asn Lys Glu Val Ser Val Gly Glu Thr Asp Ser Pro Leu Lys  
 595 600 605  
 Ser Ser Ile Thr Phe Ser Asp Lys Val Val Leu Thr Ala Asp Gln Asn  
 610 615 620  
 Ser Phe Ser Phe Arg Ile Ala Ala Leu Ser Tyr Gln Ala Pro Arg Met  
 625 630 635 640  
 Asn Lys Leu Met Tyr Lys Leu Glu Gly Phe Asp Glu Gly Trp Leu Thr  
 645 650 655  
 Ile Gly Glu Ser Pro Leu Val Thr Tyr Ser Asn Leu Gly Tyr Gly Asp  
 660 665 670  
 Tyr Val Phe Lys Val Lys Ala Ser Asn Ser Asp Gly Val Trp Asn Glu  
 675 680 685  
 Gln Glu Thr Ser Leu His Leu Ser Ile Leu Pro Pro Phe Tyr Leu Ser  
 690 695 700  
 Gly Trp Ala Tyr Cys Phe Tyr Val Leu Phe Phe Met Gly Cys Leu Val  
 705 710 715 720  
 Cys Val Ile Phe Tyr Phe Lys Arg Arg Asn Tyr Arg Lys Gln His Arg  
 725 730 735  
 Gln Met Glu Met Leu Glu Gln Glu Lys Glu Arg Glu Val Tyr His Ala  
 740 745 750  
 Lys Ile Asn Phe Phe Thr Asn Val Ala His Glu Ile Arg Thr Pro Leu  
 755 760 765  
 Thr Leu Ile Lys Gly Pro Leu Glu Asn Ile Ile Leu Lys Lys Glu Val  
 770 775 780  
 Asp Ser Glu Thr Lys Glu Asp Leu Tyr Ile Met Lys Gln Asn Thr Glu  
 785 790 795 800  
 Arg Leu Leu Asn Leu Thr Asn Gln Leu Leu Asp Phe Arg Lys Thr Glu  
 805 810 815  
 Thr Arg Gly Phe Arg Leu Asn Phe Thr Glu Cys Asp Val Val Ala Val

820 825 830  
 Leu Arg Glu Thr Tyr Leu Arg Phe Thr Ser Leu Ala Lys Gln Lys Gly  
 835 840 845  
 Leu Asp Phe Ile Leu Glu Leu Pro Gln Glu Cys Phe Met Ala Asp Val  
 850 855 860  
 Asn Gln Glu Ala Leu Thr Lys Ile Ile Ser Asn Leu Leu Asn Asn Gly  
 865 870 875 880  
 Val Lys Tyr Ala Ser Thr Tyr Leu Arg Ile Ser Leu Glu Thr Asp Glu  
 885 890 895  
 Lys Val Phe His Ile Arg Thr Phe Asn Asp Gly Glu Met Ile Pro Asp  
 900 905 910  
 Thr Met Lys Glu Glu Ile Phe Lys Pro Phe Val Arg Leu Asp Lys Glu  
 915 920 925  
 Asp Glu Val Thr Thr Gly Thr Gly Ile Gly Leu Ala Leu Ser Arg Ser  
 930 935 940  
 Leu Ala Glu Leu His Gln Gly Ser Leu Met Met Glu Lys Gly Glu Glu  
 945 950 955 960  
 Val Asn Cys Phe Cys Leu Thr Leu Pro Val Asn Gln Asp Ser Thr Ile  
 965 970 975  
 Thr Leu Ser Ala Glu Asn Val Ser Gln Val Glu Glu Asn Ser Cys Gly  
 980 985 990  
 Trp Glu Gln Glu Glu Thr Asp Thr Lys Glu Lys Lys Pro Met Ile Leu  
 995 1000 1005  
 Val Val Glu Asp Asn Pro Asp Met Leu Ala Phe Ile Arg Lys Gln Leu  
 1010 1015 1020  
 Thr Thr Glu Tyr Ser Val Leu Thr Ala Met Asn Gly Ile Glu Ala Leu  
 1025 1030 1035 1040  
 Ala Val Leu Asp Asn His Tyr Val Asn Leu Val Val Ser Asp Val Met  
 1045 1050 1055  
 Met Pro Gln Met Asp Gly Phe Glu Leu Cys Lys Thr Ile Lys Ser Asp  
 1060 1065 1070  
 Leu Ser Tyr Ser His Ile Pro Val Val Leu Leu Thr Ala Lys Thr Asn  
 1075 1080 1085  
 Ile Gln Ser Lys Ile Glu Gly Leu Glu Leu Gly Ala Asp Ala Tyr Ile  
 1090 1095 1100  
 Glu Lys Pro Phe Ser Val Glu Tyr Leu Leu Ala Asn Ile Ser Ser Leu  
 1105 1110 1115 1120  
 Ile His Asn Arg Glu Lys Leu Arg Gln Thr Phe Ala Lys Ser Pro Phe  
 1125 1130 1135  
 Val Ala Ala Asn Thr Met Ala Leu Thr Lys Ala Asp Glu Glu Phe Ile  
 1140 1145 1150  
 Trp Lys Leu Asn Asp Ile Ile Gln Ala Asn Leu His Asn Pro Glu Phe  
 1155 1160 1165  
 Ser Met Glu Asp Met Ala Asp Ala Leu Lys Met Ser Arg Ser Ser Phe  
 1170 1175 1180  
 Tyr Arg Lys Ile Lys Gly Val Leu Asp Leu Ser Pro Asn Glu Tyr Leu  
 1185 1190 1195 1200  
 Arg Leu Glu Arg Leu Lys Gln Ala Ala Gln Leu Leu Lys Glu Gly Lys  
 1205 1210 1215  
 Ser Arg Val Asn Glu Ile Cys Tyr Thr Val Gly Phe Asn Ser Pro Ser  
 1220 1225 1230  
 Tyr Phe Ser Lys Cys Phe Leu Lys Gln Phe Gly Val Leu Pro Lys Asp  
 1235 1240 1245  
 Phe Ile Gly  
 1250

&lt;210&gt; 7930

&lt;211&gt; 85

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7930

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His Arg Val Lys Ala Cys Ser Leu Asp Val Asn Lys Lys Phe Phe Lys
1          5          10          15
Cys Lys Arg Leu Val Ile Cys Ala Gln Lys Pro Asp Asn Leu Gln Lys
          20          25          30
Thr Leu Thr Met Leu Ile Glu Glu Arg Tyr Lys Asp Glu Asp Thr Gly
          35          40          45
Ser Asp Gly Val Asn Ser Leu Ser Lys Leu Glu Leu Ser Tyr Ser Ala
          50          55          60
Gly Val Cys Phe Phe Leu Leu Lys Gln Ala Lys Arg Thr Ile Ile Asn
65          70          75          80
Leu Glu Ile Lys Lys
          85

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&lt;210&gt; 7931

&lt;211&gt; 100

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7931

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Pro Ile Phe Leu Thr Ala Ala Ser Arg Arg Ser Leu Asp Arg Val Ser
1          5          10          15
Val Pro Met Trp Gly Thr Phe Leu Ser Glu Pro Leu Ser Ile Glu Gly
          20          25          30
Leu Val Ser Arg Tyr Leu Thr Asn Asn Leu Met Glu Arg Ile Pro Ile
          35          40          45
Leu Tyr Arg Asn Pro Leu Ile Ile Lys Pro Cys Gly Ile Ile Ile Pro
          50          55          60
Ser Gly Ile Asn Leu Ser Phe Glu Arg Leu Ser Pro Ser Lys Gly Gln
65          70          75          80
Val Gly Tyr Val Leu Leu Thr Arg Ala Pro Val Ala Ser Lys Glu Ser
          85          90          95
Lys Leu Ser Ser
          100

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&lt;210&gt; 7932

&lt;211&gt; 567

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7932

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Phe Ile Pro Lys Met Ile Lys Lys Leu Tyr Leu Pro Leu Leu Met Ala
1          5          10          15
Leu Val Val Ala Leu Ser Ser Cys Ser Asn Lys Met Gly Ala Leu Ser
          20          25          30
Ser Asp Tyr Phe Thr Thr Thr Pro Gln Val Leu Glu Ala Val Gly Gly
          35          40          45
Lys Val Pro Val Thr Ile Asn Gly Lys Phe Pro Glu Lys Tyr Phe Lys
          50          55          60
Lys Asn Ala Val Val Glu Val Thr Pro Val Leu Lys Trp Glu Gly Gly
65          70          75          80
Gln Val Lys Gly Gln Pro Ala Val Phe Gln Gly Glu Lys Val Glu Gly
          85          90          95
Asn Asp Gln Thr Ile Ser Tyr Lys Met Gly Gly Asn Tyr Thr Met Lys
          100          105          110
Thr Thr Phe Asp Tyr Val Pro Glu Met Ala Lys Ser Glu Leu Tyr Leu
          115          120          125

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Glu Phe Asn Ala Lys Val Gly Lys Lys Thr Ile Ala Ile Pro Ala Val  
 130 135 140  
 Lys Ile Ala Asp Gly Val Ile Ser Thr Ser Glu Leu Ile Asn Asn Thr  
 145 150 155 160  
 Leu Ser Ser Ala Asn Pro Ala Leu Gly Asp Asp Ala Phe Gln Arg Ile  
 165 170 175  
 Ile Lys Glu Ala His Asn Ala Asn Ile Met Phe Leu Ile Gln Gln Ala  
 180 185 190  
 Asn Ile Arg Ser Ser Glu Leu Lys Thr Ala Lys Glu Phe Asn Lys Glu  
 195 200 205  
 Val Ala Asn Val Asn Asp Ala Glu Asn Lys Lys Ile Ser Asn Ile Glu  
 210 215 220  
 Ile Ser Ala Tyr Ala Ser Pro Asp Gly Gly Val Lys Leu Asn Thr Gly  
 225 230 235 240  
 Leu Ala Glu Asn Arg Glu Gly Asn Thr Thr Lys Leu Ile Asn Lys Asp  
 245 250 255  
 Leu Lys Lys Ala Lys Ile Glu Val Pro Val Asp Ala Lys Tyr Thr Ala  
 260 265 270  
 Gln Asp Trp Glu Gly Phe Gln Glu Leu Val Ser Lys Ser Asn Ile Gln  
 275 280 285  
 Asp Lys Glu Leu Ile Leu Arg Val Leu Ser Met Tyr Gln Asp Pro Glu  
 290 295 300  
 Gln Arg Glu Thr Glu Ile Lys Asn Ile Ser Ser Val Tyr Lys Thr Leu  
 305 310 315 320  
 Ala Asp Glu Ile Leu Pro Gln Leu Arg Arg Ser Arg Leu Thr Leu Asn  
 325 330 335  
 Tyr Glu Ile Ile Gly Lys Ser Asp Glu Glu Ile Ala Asn Leu Ala Ala  
 340 345 350  
 Thr Asp Pro Lys Gln Leu Asn Val Glu Glu Ile Leu Tyr Ala Ala Thr  
 355 360 365  
 Leu Thr Asn Asp Pro Ala Lys Lys Ala Asp Ile Tyr Thr Lys Ala Ser  
 370 375 380  
 Gln Gln Phe Pro Asn Asp Tyr Arg Ala Phe Asn Asn Leu Gly Lys Leu  
 385 390 395 400  
 Ala Tyr Gln Ala Gly Asp Leu Asp Lys Ala Gln Ser Tyr Val Lys Lys  
 405 410 415  
 Ala Glu Ser Ile Lys Ser Ala Pro Glu Val Asn Met Asn Leu Gly Leu  
 420 425 430  
 Ile Ala Leu Ala Lys Gly Asp Lys Ala Ala Ala Glu Ser Tyr Leu Gly  
 435 440 445  
 Lys Ala Ala Gly Ala Lys Glu Leu Asn Glu Thr Leu Gly Asn Leu Tyr  
 450 455 460  
 Val Ala Gln Gly Gln Tyr Glu Arg Ala Val Asn Ala Phe Gly Asp Thr  
 465 470 475 480  
 Lys Thr Asn Ser Ala Ala Leu Ala Gln Ile Leu Ala Lys Asp Tyr Asn  
 485 490 495  
 Lys Ala Lys Asn Thr Leu Ala Gly Ile Ala Thr Pro Asp Ala Tyr Thr  
 500 505 510  
 Asp Tyr Leu Met Ala Val Leu Gly Ala Arg Thr Asn Asn Thr Ser Met  
 515 520 525  
 Leu Thr Ser Ser Leu Lys Ser Ala Val Ala Lys Asn Pro Ala Leu Ala  
 530 535 540  
 Lys Lys Ala Ala Thr Asp Leu Glu Phe Ala Lys Tyr Tyr Thr Asn Ala  
 545 550 555 560  
 Asp Phe Met Ser Ile Val Lys  
 565

&lt;210&gt; 7933

&lt;211&gt; 246

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7933

Gln	Phe	Asn	Lys	Thr	Asn	Met	Asn	Lys	Met	Gly	Leu	Thr	Leu	Ile	Tyr
1				5					10					15	
Leu	Trp	Leu	Val	Ser	Leu	Cys	Ser	Cys	Gln	Gln	Glu	Leu	Ile	Glu	Tyr
			20					25					30		
Glu	Lys	Gly	Asp	Val	Lys	Val	His	Ile	Glu	Gln	Gly	Glu	Gln	Trp	Leu
		35					40					45			
His	Asp	Phe	Pro	Leu	Phe	Leu	Gly	Ile	Asn	Lys	Lys	Asn	Pro	Pro	Gln
		50				55					60				
Ile	Ala	Ile	Trp	Leu	Glu	Asp	Thr	Gln	Gly	Asn	Tyr	Leu	Ser	Thr	Val
65					70					75					80
Tyr	Val	Thr	His	Lys	Ile	Ala	Thr	Gln	Ser	Trp	Gln	Ala	Ser	Gly	Gly
				85					90					95	
Asn	Arg	Arg	Lys	Glu	Ala	Leu	Pro	His	Trp	Cys	Tyr	Ser	Arg	Gly	Ile
			100					105					110		
Lys	Tyr	Asp	Asp	Glu	Leu	Tyr	Leu	Pro	Thr	Lys	Lys	Glu	Pro	Leu	Thr
		115					120					125			
Asp	Gly	Ile	Ser	Gly	Ala	Thr	Pro	His	Gly	Ser	Phe	Asp	Ile	Lys	Leu
130						135					140				
Ser	Pro	Thr	Thr	Ala	Leu	Lys	Lys	Phe	Val	Val	Lys	Ile	Glu	Ile	Asn
145					150					155					160
His	Ser	Thr	Asp	Phe	Asn	Glu	Ala	Phe	Pro	Lys	Leu	Ala	Lys	Glu	Gly
				165					170					175	
Glu	Thr	Asn	Tyr	Ser	Gly	Gly	Lys	Glu	Gly	Ser	Gly	Gln	Pro	Ala	Ile
			180					185					190		
Val	Tyr	Thr	Ala	Asn	Val	Asp	Leu	Leu	Ser	Gly	Glu	Lys	Ser	Phe	Glu
		195					200					205			
Ala	Asn	Leu	Ile	Gly	His	Ser	Ser	Pro	Asp	Gly	Ser	Ser	Gly	Glu	Ile
		210				215					220				
Asn	Glu	Asp	Thr	Ser	Gly	Leu	Thr	Thr	Ala	Leu	His	Ile	Val	Lys	Arg
225					230					235					240
Ile	Thr	Val	Thr	Ile	Gln										
				245											

&lt;210&gt; 7934

&lt;211&gt; 410

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7934

Thr	Tyr	Asn	Asn	Leu	Asn	Met	Met	Thr	His	Asn	Ile	Ile	Arg	His	Leu
1				5					10					15	
Lys	Ser	Leu	Arg	Gln	Thr	Leu	Ser	Gln	Asp	Lys	Lys	Pro	Ile	Gly	Phe
			20					25					30		
Phe	Ile	Ser	Ala	Gly	Cys	Pro	Leu	Ser	Ile	Glu	Ile	Thr	Pro	Pro	Glu
		35					40					45			
Asn	Trp	Pro	Leu	Ile	Pro	Asp	Met	Lys	Lys	Leu	Ser	Glu	Tyr	Val	Thr
	50				55						60				
Ser	Ile	Leu	Lys	Ser	Ser	Asp	Thr	Thr	Lys	Leu	Ser	Thr	Tyr	Asp	Arg
65					70					75					80
Leu	Ile	Ser	Glu	Leu	Glu	Lys	Thr	Asn	Lys	Ser	Lys	Glu	Asn	Leu	Glu
			85					90					95		
Asp	Ile	Leu	Ser	Phe	Ile	Arg	Ser	Leu	Lys	Asp	Val	Ala	Gln	Gly	Gly
		100					105						110		
Gly	Thr	Val	Arg	Gly	Leu	Thr	Glu	Thr	Glu	Leu	Glu	Asp	Leu	Glu	Thr
		115					120					125			

Asn Ile Cys Lys Leu Ile Val Gly Lys Ile Arg Val Asn Leu Pro Asn  
 130 135 140  
 Lys Asn Thr Pro Tyr His Lys Leu Ala Lys Trp Ile Ser Ser Ile Asp  
 145 150 155 160  
 Arg Glu Lys Pro Ile Glu Leu Phe Thr Thr Asn Tyr Asp Leu Leu Met  
 165 170 175  
 Glu Gln Ala Leu Glu Asp Val Gly Val Pro Tyr Phe Asp Gly Phe Val  
 180 185 190  
 Gly Ser Arg Gln Ser Phe Phe Asp Leu Arg Thr Val Glu Glu Asp Leu  
 195 200 205  
 Ala Pro Arg His Trp Thr Arg Leu Trp Lys Ile His Gly Ser Ile Asn  
 210 215 220  
 Trp Phe Gln Lys Glu Asn Lys Asp Val Phe Arg Ser Asp Ala Tyr Lys  
 225 230 235 240  
 Asn Asp Thr Asp Glu Ser Ser Tyr Leu Ile Tyr Pro Ser His Leu Lys  
 245 250 255  
 Tyr Asp Gln Ser Arg Lys Met Pro Phe Leu Ala Leu Ser Asp Gln Leu  
 260 265 270  
 Gly Arg Phe Leu Lys Gln Pro Ser Ala Ala Leu Ile Leu Cys Gly Tyr  
 275 280 285  
 Ser Phe Asn Asp Glu His Ile Asn Asp Thr Ile Val Asn Ala Ile Lys  
 290 295 300  
 Ser Asn Pro Thr Ala Ile Val Ile Ala Leu Met Phe Gly Asn Met Glu  
 305 310 315 320  
 Asp Gly Ser Ile Glu Arg Tyr Pro Lys Gly Val Glu Leu Ala Leu Lys  
 325 330 335  
 Arg His Asn Ile Ser Phe Trp Thr Asn Asp Glu Ala Ile Ile Gly Thr  
 340 345 350  
 Asn Arg Gly Gln Trp Ile Val Leu Asp Lys Asp Val Asp Asp Pro Leu  
 355 360 365  
 Ile Gln Leu Val Glu Val Asn Ser Ser Thr Asn Asn Lys Thr Ile Lys  
 370 375 380  
 Phe Gly Asp Phe Lys Val Phe Ser Thr Phe Leu Thr Ser Leu Ile Gly  
 385 390 395 400  
 Tyr Gln Glu Glu Glu Asn Lys Asn Asp Lys  
 405 410

&lt;210&gt; 7935

&lt;211&gt; 435

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7935

Ser Arg Asn Lys Ser Met Lys Met Lys Tyr Leu Leu Ala Ala Cys Thr  
 1 5 10 15  
 Ala Phe Phe Leu Val Ser Cys Ser Asn Asp Asp Glu Pro Gln Pro Ser  
 20 25 30  
 Pro Gln Tyr Gly Asp Ile Val Gly Leu Asn Ile Lys Asp Ala Lys Tyr  
 35 40 45  
 Ile Tyr Thr Ser Gly Ser Asn Thr Arg Ser Ser Ser Ala Glu Tyr Arg  
 50 55 60  
 Gln Ile Lys Lys Asp Gly Arg Asp Met Glu Leu Ser Trp Ile Asp Ser  
 65 70 75 80  
 Lys Gly Asp Thr Ile Lys Ile Ser Gly Asn Pro Lys Ile Trp Asn Ile  
 85 90 95  
 Asn Lys Lys Tyr Leu Met Ile Asn Thr Gly Val Pro Ile Asn Tyr Gln  
 100 105 110  
 Pro Lys Tyr Asp Glu Asp Gly Asp Arg Leu Pro Asp Ser Thr Pro Leu  
 115 120 125



Gly Gly Tyr Ser Tyr Leu Ile Asp Lys Thr Thr Glu Ala Ile Tyr Asp  
 130 135 140  
 Leu Ala Glu Gly Leu Asn Gly Glu Asn Ala Val Thr Asp Asn Lys Gly  
 145 150 155 160  
 Asn Ile Tyr Ala Val Asp Asn Ser Thr Gly Ala Val Leu Phe Lys Ile  
 165 170 175  
 His Thr Gln Asp Ala Ala Asn Leu Lys Leu Glu Leu Tyr Ala Lys Ala  
 180 185 190  
 Ser Thr Ser His Lys Thr Pro Phe Val Val Asn Asn Lys Gly Ile Cys  
 195 200 205  
 Phe Tyr Asp Tyr Arg Tyr Ile Arg Pro Ser Tyr Gly Thr Gln Gln Phe  
 210 215 220  
 Ile Ile Ser Asn Phe Ile Ser Gly Thr Glu Tyr Gly Asn Ala Phe Val  
 225 230 235 240  
 Ser His Asp Asn Glu Asp Met Tyr Ile Thr Ala Ile Asn Ser Ser Leu  
 245 250 255  
 Glu Glu Gly Lys Ser Asn Leu Ile Val Ser Lys Leu Lys Glu Asn Lys  
 260 265 270  
 Glu Ile Gln Ser Glu Val Met Ala Glu Leu Ser Phe Asp Gly Ile Trp  
 275 280 285  
 Gln Ser Gln Met Ser Asp Gly Ile Gln Val Lys Trp Asn Asp Arg Arg  
 290 295 300  
 Gly Thr Met Leu Ile His Leu Tyr Arg Tyr Asn Glu Ser Thr Tyr Glu  
 305 310 315 320  
 Tyr Leu Leu Ala Thr Lys Thr Leu Thr Lys Ile Pro Val Asn Leu Gly  
 325 330 335  
 Gly Phe Phe Thr Lys Asp Tyr Ser Thr Tyr Ile Thr Thr Asn Ala Leu  
 340 345 350  
 Tyr Ala Gln Lys Ser Val Asn Lys Leu Asp Ile Ile Ala Leu Glu Asp  
 355 360 365  
 Tyr Ser Thr Lys Thr Leu Asp Leu Ser Gly Lys Gly Ile Asp Phe Arg  
 370 375 380  
 Ser Ile Tyr Thr Met Glu Gly Ser Asp Leu Leu Tyr Phe Ala Gly Phe  
 385 390 395 400  
 Gln Tyr Ser Thr Ser Gln Ser Val Ile Gly Thr Ile Asp Ile Asp Gly  
 405 410 415  
 Asn Ile Glu Ile Ser Glu Ser Thr Pro Asn Pro Ile Thr Asn Ile Ile  
 420 425 430  
 Gln Ile Asn  
 435

&lt;210&gt; 7936

&lt;211&gt; 87

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7936

His Ser Val Lys Met Tyr Phe Glu Ile Pro Gln Asn Gln Phe Phe Val  
 1 5 10 15  
 Pro Trp Lys Gln Glu Glu Ser Lys Lys Arg Arg Asn Thr Leu Phe Gln  
 20 25 30  
 Glu Val Arg Glu Ser Glu Asn Thr Val Lys Cys Tyr His Lys Asp Lys  
 35 40 45  
 Ile Pro Arg Ala Phe Thr Leu Arg Lys Lys Pro Gly Asn Leu Ile Asn  
 50 55 60  
 Ile Arg Asn Asn Thr Phe Lys Lys Ser Pro Pro Asn Ser Val Leu Glu  
 65 70 75 80  
 Glu Lys Ala Val Leu Phe Pro  
 85

<210> 7937  
 <211> 61  
 <212> PRT  
 <213> B.fragilis

<400> 7937  
 Ile Asn Val Asn Pro Ile Leu Phe Ile Leu Val Leu Leu Asn Cys Tyr  
 1 5 10 15  
 Phe Ile Ile Val Thr Asn Arg Glu His Gly Lys Gln Lys Asn Ile Arg  
 20 25 30  
 Leu Val Met Phe Gln Ser Phe Tyr Gly Glu Asn Lys Gly Phe Ala Leu  
 35 40 45  
 His Asn Gln Phe Ser Leu Leu Met Leu Gly Val Pro Tyr  
 50 55 60

<210> 7938  
 <211> 633  
 <212> PRT  
 <213> B.fragilis

<400> 7938  
 Leu Gly Thr Lys Lys Lys Lys Ile Lys Met Thr Ser Lys Ala Thr Tyr  
 1 5 10 15  
 Ile Gly Asp Val Gln Asn Val Asn Gly Thr Thr Val Ser Val Thr Phe  
 20 25 30  
 Ser Pro Asn Cys Ile Ser Gly Leu Thr Tyr Val Asn Gly Glu Gly Tyr  
 35 40 45  
 Lys Ile Gly Gln Val Gly Ser Phe Val Lys Ile Pro Leu Gly Tyr Thr  
 50 55 60  
 Asp Leu Phe Gly Ile Val Ser Gln Ile Gly Ala Asn Ala Val Pro Glu  
 65 70 75 80  
 Ala Gln Ile Glu Ser Gln Pro His Gly Asn Arg Trp Ile Thr Ile Gln  
 85 90 95  
 Leu Ile Gly Glu Gly Gln Arg Ser Gly Gly Phe Glu Arg Gly Ile Ser  
 100 105 110  
 Gln Tyr Pro Thr Ile Gly Asp Glu Val His Leu Val Ser Glu Ser Asp  
 115 120 125  
 Leu Lys His Ile Tyr Gly Asn Ile Asp Lys Thr Asn Leu Val Asn Ile  
 130 135 140  
 Gly His Ile Ala Gly Ala Glu Ser Ile Pro Ala Leu Ile Asp Ile Asn  
 145 150 155 160  
 Lys Leu Ile Thr Arg His Ser Ala Ile Val Gly Ser Thr Gly Ser Gly  
 165 170 175  
 Lys Ser Thr Thr Val Ala Gly Leu Leu Asp Ala Leu Ser Asn Asn Asn  
 180 185 190  
 Lys Tyr Pro Ala Ser Arg Ile Leu Ile Phe Asp Ile His Gly Glu Tyr  
 195 200 205  
 Ser Lys Thr Phe Lys Asp Ser Ala Asn Ile Tyr Lys Ile Asn Pro Glu  
 210 215 220  
 Glu Thr Ser Glu Pro Asn Ile Lys Ser Leu Asp Ile Pro Tyr Trp Ala  
 225 230 235 240  
 Met Ser Phe Asp Glu Leu Ile Ser Leu Thr Leu Gly Asp Ile Asp Glu  
 245 250 255  
 Lys Glu Lys Ala Pro Ile Gly Glu Leu Ile Ile Glu Leu Lys Lys Lys  
 260 265 270  
 Thr Phe Thr Asp Ser Pro Asp Lys Tyr Pro Asp Ile Asp Ile Asn Arg  
 275 280 285  
 Ile Thr Val Asp Thr Pro Leu Pro Phe Ser Leu Lys Arg Leu Trp Leu

290 295 300  
 Tyr Leu Tyr Arg Leu Val Tyr Ser Thr His Asn Thr Gln Ser Thr Gly  
 305 310 315 320  
 Gln Arg Phe Cys Ser Ile Thr Glu Asn Phe Asp Ile Arg Asn Thr Thr  
 325 330 335  
 Glu Ala Phe Lys Leu Asp Ser Glu Asp Thr Pro Leu Gln Leu Gly Asn  
 340 345 350  
 Ala Glu Asp Ile Ile Pro Pro His Tyr Leu Pro Gln Gln Ala Ser Arg  
 355 360 365  
 Ile Tyr Gln Ser Ser Ser Thr Leu Asn Ile Arg Arg Pro Ile Ser Leu  
 370 375 380  
 Leu Thr Ser Lys Leu Arg Asp Pro Arg Tyr Asp Phe Val Phe Asn Pro  
 385 390 395 400  
 Gly Ser Trp Thr Val Asp Leu Glu Gly Asn Ile Glu Gln Asp Leu Asp  
 405 410 415  
 Ser Leu Phe Lys Met Trp Ile Gly Glu Lys Asn Ile Ser Ile Leu Asp  
 420 425 430  
 Leu Ser Gly Ile Pro Asn Asn Ile Leu Asn Thr Ile Ile Gly Ile Leu  
 435 440 445  
 Leu Arg Ile Ile Tyr Asp Ala Ile Phe Trp Ser Arg Lys Leu Pro Gln  
 450 455 460  
 Gly Gly Lys Glu Arg Pro Leu Leu Leu Val Met Glu Glu Ala His Asn  
 465 470 475 480  
 Tyr Leu Asn Asp Asn Phe Lys Gly Val Ala Ser Ser Ile Val Gln Arg  
 485 490 495  
 Ile Val Lys Glu Gly Arg Lys Tyr Gly Ile Gly Ala Met Ile Val Ser  
 500 505 510  
 Gln Arg Pro Ser Glu Ile Asn Ser Thr Ile Leu Ser Gln Cys Gly Thr  
 515 520 525  
 Ile Ile Ser Leu Arg Leu Ser Asn Ala Thr Asp Arg Gly His Val Thr  
 530 535 540  
 Gly Thr Val Thr Asp Ser Leu Glu Gly Leu Met Asn Met Leu Pro Ile  
 545 550 555 560  
 Leu Arg Thr Gly Glu Ala Ile Val Val Gly Glu Ser Val Lys Leu Pro  
 565 570 575  
 Met Arg Ala Gln Ile Ser Ala Pro Ser Lys Glu Arg Arg Pro Asp Ser  
 580 585 590  
 Gln Asp Pro Ile Val Val Ser Glu Asn Glu Asn Asp Lys Ile Gly Trp  
 595 600 605  
 Arg Asn Glu Thr Ser Ile Ser Asp Asn Asp Tyr Thr Lys Met Ile Lys  
 610 615 620  
 Ala Trp Arg Lys Gln Asp Pro Asn Val  
 625 630

<210> 7939  
 <211> 285  
 <212> PRT  
 <213> B.fragilis

<400> 7939  
 Lys Tyr Tyr Lys Ile Asn Lys Ile Ile Leu Thr Asn Thr Leu Leu Ala  
 1 5 10 15  
 Met Leu Glu Lys Ile Gln Glu Thr Ala Ala Phe Leu Lys Gly Lys Met  
 20 25 30  
 His Thr Ser Pro Glu Thr Ala Ile Ile Leu Gly Thr Gly Leu Gly Ser  
 35 40 45  
 Leu Ala Asn Glu Ile Thr Glu Lys Tyr Glu Ile Lys Tyr Glu Asp Ile  
 50 55 60  
 Pro Asn Phe Pro Val Ser Thr Val Glu Gly His Ser Gly Lys Leu Ile

65 70 75 80  
 Phe Gly Lys Leu Gly Asn Lys Glu Ile Met Ala Met Gln Gly Arg Phe  
 85 90 95  
 His Tyr Tyr Glu Gly Tyr Ser Met Lys Glu Val Thr Phe Pro Val Arg  
 100 105 110  
 Val Met Arg Glu Leu Gly Ile Lys Thr Leu Phe Val Ser Asn Ala Ser  
 115 120 125  
 Gly Gly Thr Asn Pro Glu Phe Glu Ile Gly Asp Leu Met Ile Ile Thr  
 130 135 140  
 Asp His Ile Asn Tyr Phe Pro Glu His Pro Leu Arg Gly Lys Asn Ile  
 145 150 155 160  
 Pro Tyr Gly Pro Arg Phe Pro Asp Met Ser Glu Ala Tyr Asp Lys Glu  
 165 170 175  
 Leu Ile Arg Lys Ala Asp Val Ile Ala Ala Glu Lys Gly Ile Lys Val  
 180 185 190  
 Gln His Gly Ile Tyr Ile Gly Thr Gln Gly Pro Thr Phe Glu Thr Pro  
 195 200 205  
 Ala Glu Tyr Lys Leu Phe His Ile Leu Gly Ala Asp Ala Val Gly Met  
 210 215 220  
 Ser Thr Val Pro Glu Val Ile Val Ala Asn His Cys Gly Ile Lys Val  
 225 230 235 240  
 Phe Gly Ile Ser Val Val Thr Asp Leu Gly Val Glu Gly Lys Ile Val  
 245 250 255  
 Glu Val Ser His Glu Glu Val Gln Lys Ala Ala Asp Ala Ala Gln Pro  
 260 265 270  
 Lys Met Thr Thr Ile Met Arg Glu Leu Ile Asn Arg Ala  
 275 280 285

<210> 7940  
 <211> 640  
 <212> PRT  
 <213> B.fragilis

<400> 7940

Val Thr Ile Asn Val Phe Ser Leu Trp Ile Arg His Trp Ala Val Val  
 1 5 10 15  
 Gln Phe Lys Lys Asp Asp Val Ala Tyr Glu Arg Asp Tyr Phe Met Ser  
 20 25 30  
 Tyr Pro Ala Asn Val Met Ala Ile Arg Phe Lys Ala Asp Arg Pro Gly  
 35 40 45  
 Lys Gln Asn Leu Thr Phe Ser Tyr Ser Pro Asn Pro Val Ser Thr Gly  
 50 55 60  
 Ser Met Ser Ala Asp Gly Ala Asn Gly Leu Ala Tyr Thr Ala His Leu  
 65 70 75 80  
 Asp Asn Asn Gly Met Gln Tyr Val Val Arg Ile His Ala Ile Ala Lys  
 85 90 95  
 Gly Gly Thr Leu Ser Asn Ala Asn Gly Lys Ile Thr Val Lys Asp Ala  
 100 105 110  
 Asp Glu Ala Val Phe Leu Val Thr Ala Asp Thr Asp Tyr Lys Ile Asn  
 115 120 125  
 Phe Asp Pro Asp Phe Lys Asp Pro Lys Ala Tyr Val Gly Val Asn Pro  
 130 135 140  
 Ala Glu Thr Thr Arg Gln Trp Met Asp Asn Ala Val Ala Met Gly Tyr  
 145 150 155 160  
 Asp Val Leu Phe Lys Gln His Tyr Asp Asp Tyr Ala Ala Leu Phe Asn  
 165 170 175  
 Arg Val Lys Leu Gln Leu Asn Pro Asp Ala Gln Ser Ala Asn Leu Pro  
 180 185 190  
 Thr Gly Lys Arg Leu Gln Asn Tyr Arg Lys Gly Gln Pro Asp Phe Tyr

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      195              200              205
Leu Glu Glu Leu Tyr Tyr Gln Phe Gly Arg Tyr Leu Leu Ile Ala Ser
 210              215              220
Ser Arg Pro Gly Asn Met Pro Ala Asn Leu Gln Gly Ile Trp His Asn
 225              230              235              240
Asn Val Asp Gly Pro Trp Arg Val Asp Tyr His Asn Asn Ile Asn Ile
      245              250              255
Gln Met Asn Tyr Trp Pro Ala Cys Ser Thr Asn Leu Tyr Glu Cys Thr
      260              265              270
Leu Pro Leu Ile Asp Phe Ile Arg Thr Leu Val Lys Pro Gly Gln Lys
      275              280              285
Thr Ala Gln Ala Tyr Phe Gly Thr Arg Gly Trp Thr Ala Ser Ile Ser
      290              295              300
Ala Asn Ile Phe Gly Phe Thr Thr Pro Leu Glu Ser Glu Glu Met Ala
 305              310              315              320
Trp Asn Phe Asn Pro Met Ala Gly Pro Trp Leu Ala Thr His Val Trp
      325              330              335
Glu Tyr Tyr Asp Tyr Thr Arg Asp Lys Lys Phe Leu Lys Glu Thr Gly
      340              345              350
Tyr Asp Leu Ile Lys Ser Ser Ala Gln Phe Ala Thr Asp Phe Leu Trp
      355              360              365
Arg Lys Pro Asp Gly Thr Tyr Thr Ala Ala Pro Ser Thr Ser Pro Glu
      370              375              380
His Gly Pro Ile Asp Glu Gly Thr Thr Phe Val His Ala Val Ile Arg
 385              390              395              400
Glu Ile Leu Gln Asp Ala Ile Glu Ala Ser Lys Val Leu Gly Val Asp
      405              410              415
Ser Lys Glu Arg Lys Gln Trp Gln Glu Val Leu Thr His Leu Ala Pro
      420              425              430
Tyr Lys Val Gly Arg Tyr Gly Gln Leu Met Glu Trp Ser Lys Asp Ile
      435              440              445
Asp Asp Pro Lys Asp Glu His Arg His Val Asn His Leu Phe Gly Leu
      450              455              460
His Pro Gly His Thr Leu Ser Pro Ile Thr Thr Pro Asp Leu Ala Lys
      465              470              475              480
Ala Ala Arg Val Val Leu Glu His Arg Gly Asp Gly Ala Thr Gly Trp
      485              490              495
Ser Met Gly Trp Lys Leu Asn Gln Trp Ala Arg Leu Gln Asp Gly Asn
      500              505              510
His Ala Tyr Lys Leu Phe Gly Asn Leu Leu Lys Asn Gly Thr Leu Asp
      515              520              525
Asn Leu Trp Asp Thr His Pro Pro Phe Gln Ile Asp Gly Asn Phe Gly
      530              535              540
Gly Thr Ala Gly Ile Thr Glu Met Leu Leu Gln Ser His Met Gly Phe
      545              550              555              560
Ile Gln Leu Leu Pro Ala Leu Pro Asp Ala Trp Lys Asp Gly Ser Ile
      565              570              575
Ser Gly Ile Cys Ala Lys Gly Asn Phe Glu Val Asp Leu Ser Trp Lys
      580              585              590
Asn Gly Gln Leu Ala Glu Ala Thr Ile Phe Ser Lys Ala Gly Glu Pro
      595              600              605
Cys Thr Val Arg Tyr Gly Asp Lys Thr Leu Ser Phe Lys Thr Ser Lys
      610              615              620
Gly Lys Val Tyr Lys Leu Ala Leu Asp Ala Asp Arg Leu Val Ile Lys
      625              630              635              640

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&lt;210&gt; 7941

&lt;211&gt; 688

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7941

Ile	Thr	Ile	Asn	Thr	Arg	Asn	Ile	Ser	Met	Glu	Lys	Asn	Phe	Lys	Arg
1			5					10					15		
Thr	Thr	Val	Thr	Ser	Ala	Leu	Pro	Tyr	Ala	Asn	Gly	Pro	Val	His	Ile
		20					25					30			
Gly	His	Leu	Ala	Gly	Val	Tyr	Val	Pro	Ala	Asp	Ile	Tyr	Val	Arg	Tyr
	35					40					45				
Leu	Arg	Leu	Lys	Lys	Glu	Asp	Val	Leu	Phe	Ile	Gly	Gly	Ser	Asp	Glu
	50				55						60				
His	Gly	Val	Pro	Ile	Thr	Ile	Arg	Ala	Lys	Lys	Glu	Gly	Ile	Thr	Pro
65				70					75					80	
Gln	Asp	Val	Val	Asp	Arg	Tyr	His	Phe	Leu	Ile	Lys	Lys	Ser	Phe	Glu
		85					90						95		
Glu	Phe	Gly	Ile	Ser	Phe	Asp	Val	Tyr	Ser	Arg	Thr	Ser	Ser	Lys	Thr
	100						105					110			
His	His	Glu	Leu	Ala	Ser	Asp	Phe	Phe	Lys	Lys	Leu	Tyr	Glu	Lys	Gly
	115					120						125			
Glu	Phe	Ile	Glu	Lys	Thr	Ser	Glu	Gln	Tyr	Tyr	Asp	Glu	Glu	Ala	His
	130				135						140				
Gln	Phe	Leu	Ala	Asp	Arg	Tyr	Ile	Thr	Gly	Glu	Cys	Pro	His	Cys	His
145				150					155					160	
Ser	Glu	Gly	Ala	Tyr	Gly	Asp	Gln	Cys	Glu	Lys	Cys	Gly	Thr	Ser	Leu
			165				170						175		
Ser	Pro	Thr	Asp	Leu	Ile	Asn	Pro	Lys	Ser	Ala	Ile	Ser	Gly	Ser	Lys
		180					185					190			
Pro	Val	Met	Lys	Glu	Thr	Lys	His	Trp	Tyr	Leu	Pro	Leu	Asp	Lys	His
		195				200						205			
Glu	Thr	Trp	Leu	Arg	Gln	Trp	Ile	Leu	Glu	Glu	His	Lys	Glu	Trp	Arg
	210				215						220				
Pro	Asn	Val	Tyr	Gly	Gln	Cys	Lys	Ser	Trp	Leu	Asp	Met	Gly	Leu	Gln
225				230					235					240	
Pro	Arg	Ala	Val	Ser	Arg	Asp	Leu	Asp	Trp	Gly	Ile	Pro	Val	Pro	Val
			245					250					255		
Glu	Gly	Ala	Glu	Gly	Lys	Val	Leu	Tyr	Val	Trp	Phe	Asp	Ala	Pro	Ile
		260					265						270		
Gly	Tyr	Ile	Ser	Asn	Thr	Lys	Glu	Leu	Leu	Pro	Asp	Ser	Trp	Glu	Thr
	275					280						285			
Trp	Trp	Lys	Asp	Pro	Glu	Thr	Arg	Leu	Val	His	Phe	Ile	Gly	Lys	Asp
	290				295						300				
Asn	Ile	Val	Phe	His	Cys	Ile	Val	Phe	Pro	Ala	Met	Leu	Lys	Ala	Glu
305				310					315					320	
Gly	Ser	Tyr	Ile	Leu	Pro	Asp	Asn	Val	Pro	Ser	Asn	Glu	Phe	Leu	Asn
			325					330					335		
Leu	Glu	Gly	Asp	Lys	Ile	Ser	Thr	Ser	Arg	Asn	Trp	Ala	Val	Trp	Leu
		340					345						350		
His	Glu	Tyr	Leu	Glu	Asp	Phe	Pro	Gly	Lys	Gln	Asp	Val	Leu	Arg	Tyr
	355					360						365			
Val	Leu	Thr	Ala	Asn	Ala	Pro	Glu	Thr	Lys	Asp	Asn	Asp	Phe	Thr	Trp
	370				375						380				
Lys	Asp	Phe	Gln	Ala	Arg	Asn	Asn	Asn	Glu	Leu	Val	Ala	Val	Tyr	Gly
385				390					395					400	
Asn	Phe	Val	Asn	Arg	Ala	Met	Val	Leu	Thr	Gln	Lys	Tyr	Phe	Glu	Gly
			405					410					415		
Lys	Val	Pro	Ala	Ala	Gly	Glu	Leu	Thr	Asp	Tyr	Asp	Lys	Glu	Thr	Leu
		420					425					430			
Lys	Glu	Phe	Ser	Asp	Val	Lys	Ala	Glu	Val	Glu	Lys	Leu	Leu	Asn	Val
	435					440						445			

Phe Lys Phe Arg Asp Ala Gln Lys Glu Ala Met Asn Leu Ala Arg Ile  
 450 455 460  
 Gly Asn Lys Tyr Leu Ala Asp Thr Glu Pro Trp Lys Leu Ala Lys Thr  
 465 470 475 480  
 Asp Met Glu Arg Val Gly Thr Ile Leu Asn Ile Ser Leu Gln Leu Val  
 485 490 495  
 Ala Asn Leu Ala Ile Ala Phe Glu Pro Phe Leu Pro Phe Ser Ser Glu  
 500 505 510  
 Arg Leu Arg Gln Met Leu Asn Met Asp Ser Phe Asp Trp Ala Glu Leu  
 515 520 525  
 Gly Arg Asn Asp Leu Leu Pro Ala Gly His Gln Leu Asn Lys Pro Glu  
 530 535 540  
 Leu Leu Phe Glu Lys Ile Glu Asp Ala Thr Ile Glu Ala Gln Val Gln  
 545 550 555 560  
 Lys Leu Leu Asp Thr Lys Lys Ala Asn Glu Glu Ala Asn Tyr Lys Ala  
 565 570 575  
 Lys Pro Ile Arg Ala Asn Ile Glu Phe Asp Asp Phe Met Lys Leu Asp  
 580 585 590  
 Ile Arg Val Gly Thr Val Leu Glu Cys Gln Lys Val Pro Lys Ala Asp  
 595 600 605  
 Lys Leu Leu Gln Phe Lys Ile Asp Asp Gly Leu Glu Thr Arg Thr Ile  
 610 615 620  
 Val Ser Gly Ile Ala Gln His Tyr Lys Pro Glu Glu Leu Val Gly Lys  
 625 630 635 640  
 Gln Val Cys Phe Ile Ala Asn Leu Ala Pro Arg Lys Leu Lys Gly Ile  
 645 650 655  
 Val Ser Glu Gly Met Ile Leu Ser Ala Glu Asn Asn Asp Gly Ser Leu  
 660 665 670  
 Ala Val Val Met Pro Gly Arg Glu Val Lys Pro Gly Ser Glu Val Lys  
 675 680 685

&lt;210&gt; 7942

&lt;211&gt; 67

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7942

Ser Ile Ser Leu Leu Lys Ala Glu Leu Val Phe Val Met Val Arg Lys  
 1 5 10 15  
 Gly His Val Lys Val Gly His Ala Gln Lys Ser Gly Tyr Asn Gln Ile  
 20 25 30  
 Glu Asp Glu Thr Ala Ile Phe Ile Tyr Ile Asn Ser Phe Leu Leu His  
 35 40 45  
 Gly Leu Ser Ala Lys Tyr Ile Ala Arg Ser Tyr Ser Tyr Tyr Tyr Tyr  
 50 55 60  
 Ala Ser Gly  
 65

&lt;210&gt; 7943

&lt;211&gt; 64

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7943

Pro Pro Thr Lys Leu Asp Asp Ile Pro Ser Glu Cys Arg Val Val Pro  
 1 5 10 15  
 Phe Gly Asn Leu Arg Ile Lys Gly His Leu His Leu Pro Glu Ala Tyr  
 20 25 30  
 Arg Ser Leu Ser Arg Pro Ser Ser Pro Pro Arg Ala Lys Ala Ser Ala

35                      40                      45  
 Met Arg Pro Tyr Leu Leu Ser Phe Ile Ala Arg Phe Ile Ser Phe Ser  
 50                      55                      60

<210> 7944  
 <211> 62  
 <212> PRT  
 <213> B.fragilis

<400> 7944  
 Pro Phe Ala Asn Arg Glu Arg Leu Ile Phe Leu Pro Pro Ser Ser Glu  
 1                      5                      10                      15  
 Ala Ala Arg Phe Ile His Tyr Leu Leu Leu Phe Asn Lys Ile Val Val  
 20                      25                      30  
 Gln Arg Ala Val Ile Lys Lys Ile Ile Ile Ile Asn Ser Cys Ile Leu  
 35                      40                      45  
 Leu Lys Val Ile Ala Ser Leu Pro Arg Asp Ile Val Ile Leu  
 50                      55                      60

<210> 7945  
 <211> 114  
 <212> PRT  
 <213> B.fragilis

<400> 7945  
 Ile Ala Gln Asn Tyr Lys Lys Lys Lys Asn Met Lys Ala Lys Phe Ser  
 1                      5                      10                      15  
 Met Ile Gly Val Leu Leu Ile Ser Leu Phe Thr Val Val Asn Ile Val  
 20                      25                      30  
 Lys Ser Asn Gln Lys Asn Lys Arg Ile Glu Asp Ile Met Leu Val Asn  
 35                      40                      45  
 Val Glu Ser Leu Ala Phe Pro Glu Ser Gly Ile Gly Ser Asp Met Arg  
 50                      55                      60  
 Ile Ala Thr Lys His Val Cys Tyr Leu Asn Asn Glu Val Phe Asp Glu  
 65                      70                      75                      80  
 Ser Thr Gly Arg Leu Glu His Ile Pro Val Glu Gly Arg Ile Gly Ile  
 85                      90                      95  
 Cys Asp Gly Thr Glu Gly Ala Cys Lys Ser Trp Pro Cys Thr Glu Val  
 100                      105                      110  
 Trp Leu

<210> 7946  
 <211> 682  
 <212> PRT  
 <213> B.fragilis

<400> 7946  
 Leu Leu Lys Asn Thr Lys Ile Met Lys Ile Lys Met Lys Tyr Ile Val  
 1                      5                      10                      15  
 Ala Gln Ala Cys Leu Val Ala Gly Ala Ser Ile Ala Leu Thr Ser Cys  
 20                      25                      30  
 Asn Asp Phe Leu Asp Arg Glu Pro Leu Asp Gln Val Thr Pro Gln Glu  
 35                      40                      45  
 Tyr Phe Gln Thr Ala Asp His Leu Ala Ala Tyr Thr Ile Ser Lys Tyr  
 50                      55                      60  
 Asn Ser Met Phe Ser Thr His Ser Gly Trp Asn Ala Gly Thr Val Asn  
 65                      70                      75                      80  
 Asn Asp Gly Gly Thr Asp Asn Met Val Val Gly Gly Tyr Asn Ser Thr



				85					90					95			
Tyr	Tyr	Glu	Lys	Gly	Ile	Trp	Lys	Val	Pro	Ser	Asn	Asn	Asp	Asn	Trp		
			100					105					110				
Ser	Asn	Gly	Leu	Ser	Leu	Ala	Arg	Tyr	Cys	Asn	Tyr	Phe	Phe	Glu	Gln		
		115					120					125					
Val	Leu	Pro	Lys	Tyr	Glu	Ala	Gly	Lys	Ile	Ser	Gly	Ala	Glu	Asp	Asp		
		130				135					140						
Leu	Lys	His	Tyr	Ile	Gly	Glu	Met	Tyr	Phe	Met	Arg	Ala	Leu	Ile	Tyr		
145				150					155						160		
Tyr	Asn	Gln	Leu	Arg	Lys	Tyr	Gly	Asp	Tyr	Pro	Ile	Ile	Thr	Glu	Val		
			165					170						175			
Leu	Pro	Asp	Asp	Glu	Ala	Ile	Leu	Ile	Glu	Lys	Ser	Val	Arg	Gln	Pro		
		180						185					190				
Arg	Asn	Lys	Val	Ala	Arg	Phe	Ile	Leu	Glu	Asp	Leu	Asp	Lys	Ala	Ile		
		195					200					205					
Gly	Leu	Met	Lys	Asn	Gln	Gly	Phe	Met	Asn	Asn	Asn	Arg	Leu	Asn	Lys		
210						215					220						
Gln	Cys	Ala	Leu	Leu	Ile	Lys	Ser	Arg	Val	Ala	Leu	Tyr	Glu	Ala	Thr		
225				230					235						240		
Phe	Glu	Lys	Tyr	His	Gln	Gly	Thr	Gly	Arg	Val	Pro	Gly	Asp	Glu	Thr		
			245					250						255			
Trp	Pro	Gly	Lys	Ser	Val	His	Pro	Asn	Phe	Ser	Leu	Asp	Val	Thr	Ala		
		260					265						270				
Glu	Ile	Asn	Phe	Phe	Leu	Asp	Gln	Cys	Met	Asp	Ala	Ala	Ser	Gln	Val		
		275					280					285					
Ala	Asp	Ala	Ile	Thr	Leu	Thr	Glu	Asn	Thr	Gly	Val	Phe	Asn	Pro	Leu		
290					295						300						
Ser	Asp	Ser	Glu	Tyr	Ser	Gly	Trp	Asn	Pro	Tyr	Phe	Glu	Met	Phe	Ser		
305				310					315					320			
Ala	Glu	Asp	Met	Ser	Gly	Tyr	Ser	Glu	Val	Leu	Phe	Trp	Lys	Asp	Tyr		
			325					330					335				
Leu	Arg	Ser	Gly	Ser	Ile	Asn	Ile	Ser	His	Gly	Ala	Pro	Asn	Tyr	Ile		
		340					345					350					
Tyr	Ser	Gly	Gly	Asn	Asn	Gly	Met	Leu	Arg	Ser	Tyr	Val	Gln	Thr	Phe		
		355					360					365					
Leu	Met	Glu	Asn	Gly	Leu	Pro	Trp	Tyr	Ala	Ser	Asn	Ser	Gly	Phe	Lys		
		370				375					380						
Gly	Asp	Ser	Arg	Ile	Gln	Glu	Glu	Lys	Glu	Gly	Arg	Asp	Gln	Arg	Leu		
385				390					395					400			
Gln	Leu	Phe	Leu	Phe	Gly	Glu	Lys	Asp	Lys	Gln	Ala	Pro	Arg	Ala	Asp		
			405					410					415				
Gly	Asp	Gly	Thr	Met	Pro	Glu	Phe	Gly	Glu	Pro	Ala	Leu	Phe	Glu	Leu		
			420					425					430				
Gln	Glu	Val	Arg	Asp	Leu	Thr	Gly	Tyr	Arg	Ile	Arg	Lys	Cys	Leu	Thr		
		435					440					445					
Tyr	Lys	Lys	Asp	Gln	Ile	Ile	Ser	Gly	Ser	Asp	Gln	Ser	Thr	Thr	Gly		
450					455					460							
Cys	Ile	Ile	Tyr	Arg	Gly	Val	Glu	Ala	Tyr	Leu	Asn	Tyr	Leu	Glu	Ala		
465				470					475					480			
Tyr	Tyr	Leu	Arg	Asn	Gly	Lys	Val	Asp	Gly	Lys	Ala	Ala	Gln	Tyr	Trp		
			485					490					495				
Thr	Ala	Ile	Arg	Lys	Arg	Gly	Gly	Val	Asp	Thr	Asp	Tyr	Glu	Lys	Thr		
		500					505						510				
Ile	Arg	Asn	Thr	Asp	Met	Ser	Lys	Glu	Val	Asp	Trp	Ala	Lys	Tyr	Ser		
		515					520					525					
Gly	Ser	Thr	Leu	Val	Asp	Ala	Thr	Leu	Phe	Asn	Ile	Arg	Arg	Glu	Arg		
		530			535					540							
Arg	Cys	Glu	Phe	Ile	Gly	Glu	Gly	Met	Arg	Trp	Asp	Asp	Leu	Met	Arg		
545				550					555				560				

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Trp Arg Ala Met Asp Gln Leu Leu Thr Thr Lys Tyr Ile Pro Glu Gly  
 565 570 575  
 Phe Asn Phe Trp Asp Glu Ala Tyr Asp Asp Tyr Val Ala Met Lys Asn  
 580 585 590  
 Asp Lys Gly Glu Pro Lys Tyr Lys Ile Val Ser Asp Gly Ser Ser Thr  
 595 600 605  
 Ala Asn Met Ser Ala Lys Glu Leu Gly Lys Tyr Val Arg Pro Tyr Ser  
 610 615 620  
 Ile Val Lys Ala Asn Asn Ala Val Phe Asp Gly Tyr Thr Phe Ala Lys  
 625 630 635 640  
 Ala Tyr Tyr Leu Tyr Pro Val Pro Ile Arg Gln Met Glu Leu Leu Ser  
 645 650 655  
 Pro Asp Arg Ser Val Asn Asn Ser Val Leu Tyr Gln Asn Pro Tyr Trp  
 660 665 670  
 Pro Ser Lys Thr Ser Glu Pro Ala Ile Glu  
 675 680

&lt;210&gt; 7947

&lt;211&gt; 321

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7947

His Thr Cys Leu Leu Lys Ile Leu Ser Phe Trp Gly Leu Cys Gly Tyr  
 1 5 10 15  
 Phe Phe Val Tyr Leu Ala Ser Gly Phe Val Ala Cys Val Lys Cys Leu  
 20 25 30  
 Leu Leu Met Arg Ala Ile Phe Ile Phe Val Cys Ile Leu Leu Phe Val  
 35 40 45  
 Ser Cys Gln Asn Ser Asp Lys Ser Arg Ile Ala His Met Ile Asp Glu  
 50 55 60  
 Trp Asp Gly Lys Glu Ile Ile Tyr Pro Asp Asp Leu Val Phe Thr Thr  
 65 70 75 80  
 Met Gly Glu Asp Thr Val Lys Trp Phe Leu Lys Asp Ser Arg Tyr Thr  
 85 90 95  
 Ile Val Thr Tyr Ala Asp Ser Ile Gly Cys Met Gly Cys Lys Leu Lys  
 100 105 110  
 Leu Pro Ala Trp Lys Asp Phe Ile Ser Tyr Leu Asp Ser Val Ser Asp  
 115 120 125  
 His Thr Val Lys Val Ile Phe Ile Leu His Pro Arg Asp Lys Lys Glu  
 130 135 140  
 Met Val His Leu Leu Glu Tyr Asn Asp Phe Ser Tyr Pro Val Cys Leu  
 145 150 155 160  
 Asp Ile Lys Gly Ser Phe Asp Lys Ile Asn Lys Ile Pro Ser Asn Leu  
 165 170 175  
 Ala Phe Gln Thr Phe Leu Leu Asp Asn Arg Asn Lys Val Ile Ala Ile  
 180 185 190  
 Gly Asn Pro Ile His Asn Pro Asn Val Arg Thr Leu Tyr Leu Asn Leu  
 195 200 205  
 Ile Leu Ser Asp Ser Ile Cys Glu Ser Arg Asp Leu Ile Gln Thr Lys  
 210 215 220  
 Ile Ser Leu Pro Glu Thr Ile Asp Met Gly Val Phe Asp Trp Ser Glu  
 225 230 235 240  
 Glu Lys Glu Ala Met Leu Ile Ile Lys Asn Leu Gly Val Val Ser Leu  
 245 250 255  
 Thr Val Glu Asn Ile Val Thr Ser Cys Gly Cys Thr Ser Val Glu Tyr  
 260 265 270  
 Ser Arg Arg Pro Val Ser Leu Lys Asp Ser Leu Val Ile Lys Ile Lys  
 275 280 285

Tyr Lys Ala Glu Ser Pro Gly Tyr Phe Asn Lys Asp Ile Ala Ile Tyr  
 290 295 300  
 Cys Asn Val Pro Ser Ser Pro Val Tyr Val Lys Leu Ser Gly Lys Ala  
 305 310 315 320  
 Gln

<210> 7948  
 <211> 349  
 <212> PRT  
 <213> B.fragilis

<400> 7948

Ile Ile Arg Lys Arg Thr Cys Ile Gly Ile Gly Met Asp Glu Ile Ser  
 1 5 10 15  
 Ile Ile Gln Ser Asn His Ile Pro Leu Ser Phe Leu Thr Gly Lys Asp  
 20 25 30  
 Ala Tyr Ser Leu Tyr Asn Lys Gly Trp Gly Tyr Ser Phe Val Tyr Ser  
 35 40 45  
 Leu Gln Glu Val Arg Asp Ile Tyr Leu Ala Ile Gln Lys Tyr Lys Tyr  
 50 55 60  
 Ile Asn Leu Gly Gln Phe Thr Asp Glu Tyr Val Ile Pro His Ile Pro  
 65 70 75 80  
 Asn Val Gly Val Ala Trp Asn Lys Arg Arg Val Leu Glu Ile Leu Asn  
 85 90 95  
 Ala Leu Val Asn Phe Gly Leu Leu Thr Pro Gln Tyr Glu Leu Thr Asn  
 100 105 110  
 Thr Val His Leu Phe Glu Asp Tyr Gln Ile Gly Lys Pro Ile Asp Asp  
 115 120 125  
 Asn Asp Asn Lys Ile Phe Arg Arg Ile Phe Phe Ser Tyr His Arg Phe  
 130 135 140  
 Arg Asp Phe Ser Ser Leu Tyr Leu Pro Ile Asp Asn Asn Tyr Ser Asn  
 145 150 155 160  
 Ile Glu Glu Val Leu Leu Asn Asn Ser Met Pro Leu Phe Ser Phe Gly  
 165 170 175  
 Ser Glu Arg Lys Tyr Thr Asp Ser Phe Phe Lys Thr Phe Lys Asp Asn  
 180 185 190  
 Pro Asp Ile Tyr Tyr Ile Pro Glu Tyr Asn Lys Asp Asn Glu Lys Asn  
 195 200 205  
 Ser Gly Cys Lys Met Phe Trp Asp Val Phe Ile Ser Trp Gly Val Gln  
 210 215 220  
 Leu Lys Val Met Glu Lys Phe Asn Ser Ser Ile Phe Asn Tyr Lys Leu  
 225 230 235 240  
 Ser Asn Gly Lys Thr Phe Ser Cys Ser Tyr Phe Leu Ser Ser Asp Asn  
 245 250 255  
 Leu Leu Met Pro Ser Leu Ile Asp Phe Ile Lys Asn Asn Tyr Pro Glu  
 260 265 270  
 Arg Lys Asn Ile Asp Leu Ser Leu Leu Ile Phe Thr Leu Cys Thr Ile  
 275 280 285  
 Phe Arg Lys Ser Leu Ser Ser Thr Lys Asp Tyr Ile Ile Glu Glu Tyr  
 290 295 300  
 Lys Arg Asn Lys Glu Tyr Ile Ser Leu Val Arg Thr Ser Glu Val Phe  
 305 310 315 320  
 Ile Lys Ser Gly Lys Phe Ala Glu Asn Ser Thr Val Ile Tyr Pro Lys  
 325 330 335  
 Tyr Lys Asp Ser Phe Ile Ser His Leu Ile Ile Arg Leu  
 340 345

<210> 7949

<211> 357  
 <212> PRT  
 <213> B.fragilis

<400> 7949

Arg Met Arg Lys Ile Gly Leu Leu Phe Ile Thr Ile Phe Cys Leu Leu  
 1 5 10 15  
 Ala Cys Lys Asn Ser Ser Arg Ile Ser Leu Glu Gly Glu Ile Lys  
 20 25 30  
 Gly Leu Thr Asn Asp Thr Leu Tyr Leu Tyr Gly Thr Asp Ala Leu Tyr  
 35 40 45  
 Asp Arg Ile Asp Thr Ile Tyr Ala Glu Lys Gly Lys Phe Ser Tyr Asn  
 50 55 60  
 Leu Asn Ile Asp Ser Thr Val Ile Asp Thr Leu Thr Thr Ala Val Leu  
 65 70 75 80  
 Leu Ile Asn Gly His Val Glu Tyr Pro Val Phe Leu Asp Lys Gly Asn  
 85 90 95  
 Gln Ile Thr Ile Lys Gly Asn Ile Asp Asp Leu Ser Tyr Leu Asp Ile  
 100 105 110  
 Asn Gly Asn Glu Pro Asn Thr Ser Leu Ser Leu Phe Met Lys Glu Gln  
 115 120 125  
 Arg Gly Leu Gly Ser Ala Ser Asp Lys Met Met Gln Glu Lys Ala Glu  
 130 135 140  
 Thr Phe Ile Arg Gln His Asn Ser Ser Leu Ala Ser Val Tyr Leu Leu  
 145 150 155 160  
 Asp Lys Tyr Phe Val Gln Thr Pro Gln Pro Asp Tyr Ile Lys Ile Lys  
 165 170 175  
 Glu Ile Thr Glu Ala Met Thr Gly Ala Leu Leu Asp Arg Pro Tyr Ile  
 180 185 190  
 Glu Asn Ile Ser Asp Tyr Ile Asp Gln Leu Glu Lys Val Thr Val Gly  
 195 200 205  
 Lys Ser Ala Pro Tyr Phe Ser Leu Pro Asn Glu Lys Gly Glu Lys Leu  
 210 215 220  
 Ser Arg Ser Ala Glu Arg Phe Arg Asn Arg Tyr Leu Leu Leu Asn Phe  
 225 230 235 240  
 Trp Ala Ser Trp Cys Asp Pro Gln Pro Glu Thr Asn Ala Glu Leu Lys  
 245 250 255  
 Arg Leu Asn Lys Glu Tyr Lys Lys Asn Lys Asn Phe Val Met Leu Gly  
 260 265 270  
 Ile Ser Leu Asp Ile Asp Arg Glu Ala Trp Glu Thr Ala Ile Lys Lys  
 275 280 285  
 Asp Thr Leu Ser Trp Asp Gln Val Cys Asp Phe Thr Gly Leu Ser Ser  
 290 295 300  
 Glu Thr Ala Lys Gln Tyr Ala Ile Leu Thr Leu Pro Thr Asn Ile Leu  
 305 310 315 320  
 Leu Ser Pro Thr Gly Lys Ile Leu Ala Arg Asp Ile Gln Gly Glu Ala  
 325 330 335  
 Leu Thr Asp Lys Leu Lys Glu Leu Leu Lys Thr Glu Glu Lys Lys Pro  
 340 345 350  
 Gly Lys Ser Ile Arg  
 355

<210> 7950  
 <211> 98  
 <212> PRT  
 <213> B.fragilis

<400> 7950

Ile Val Gly Lys Ser Ser Cys Ser Ser Val Ala Ser Arg Leu Asn Ile

1                      5                      10                      15  
 Arg Ser Lys Thr Ile Ser Cys Thr Ser Ser Gly Arg Gln Phe Gly Leu  
                          20                      25                      30  
 Ser Thr Leu Leu Ile Thr Thr Ile Gly Phe Asn Pro Ile Ser Lys Ala  
                          35                      40                      45  
 Phe Cys Ser Thr Lys Arg Val Cys Gly Ile Gly Pro Ser Lys Ala Ser  
                          50                      55                      60  
 Thr Asn Arg Met His Pro Ser Ala Met Leu Ser Thr Arg Ser Thr Ser  
 65                      70                      75                      80  
 Pro Pro Lys Ser Leu Cys Pro Gly Val Ser Ile Ile Leu Ile Leu Val  
                          85                      90                      95  
 Pro Leu

<210> 7951  
 <211> 105  
 <212> PRT  
 <213> B.fragilis

<400> 7951  
 Lys Asp Met Lys Gln Glu Tyr Leu Ile Glu Leu Val Asn Cys Ser Thr  
 1                      5                      10                      15  
 Glu Asp Ser Ile Met Leu Gln Val Asn Glu Thr Asp Thr Ser Val Lys  
                          20                      25                      30  
 Ala Met Lys Ser Trp Ile Met Gln Gln Glu Thr Ile Gln Pro Cys Lys  
                          35                      40                      45  
 Lys His His Leu His Ile Ile Gly Asn Lys Thr Cys Asp Leu Glu Leu  
                          50                      55                      60  
 Glu Asp Val Tyr Thr Leu Cys Lys Ile Ile Gln Ala Val Val Ala Glu  
 65                      70                      75                      80  
 Pro Leu Ser Trp Asp Ile Ile Glu Arg Val Leu Ser Glu Lys Asp Ser  
                          85                      90                      95  
 Asn Leu Val Ala Ser Leu Leu Leu Tyr  
                          100                      105

<210> 7952  
 <211> 185  
 <212> PRT  
 <213> B.fragilis

<400> 7952  
 Arg Leu Met Asn Glu Lys Glu Ala Ile Ile Lys Leu Lys Thr Cys Asn  
 1                      5                      10                      15  
 Asp Lys Ala Ala Phe Ala Phe Leu Tyr Arg Ser Tyr Trp Ala Lys Val  
                          20                      25                      30  
 Tyr Asn Phe Thr Arg Leu Tyr Ile Thr Ser Ala Val Asp Val Glu Glu  
                          35                      40                      45  
 Ile Val Gln Glu Val Phe Ile Lys Ile Trp Glu Asn Arg Glu Ala Leu  
                          50                      55                      60  
 Asp Glu Glu Gln Asn Phe Ala Gly Tyr Leu Phe Ile Thr Met Arg Asn  
 65                      70                      75                      80  
 Leu Val Phe Asn Arg Ser Arg Lys Asn Leu Asn Glu Pro Phe Tyr Gln  
                          85                      90                      95  
 Leu Ser Val Ile Glu Ala Val Glu Glu Ser Tyr Asp Ile Glu Glu Glu  
                          100                      105                      110  
 Leu Asp Ala Ala Asn Leu Arg Thr His Ile Ser Ala Leu Ile Ser Met  
                          115                      120                      125  
 Leu Pro Pro Arg Gln Gln Glu Val Phe Arg Leu Ser Arg Asp Glu Glu  
                          130                      135                      140

Leu	Ser	Tyr	Arg	Glu	Ile	Ala	Glu	Arg	Leu	Gln	Ile	Ser	Glu	Arg	Thr
145					150					155					160
Val	Glu	His	His	Ile	Ser	Asp	Ala	Leu	Lys	Phe	Leu	Arg	Lys	Asn	Ile
				165					170					175	
Lys	Leu	Tyr	Leu	Leu	Phe	Leu	Ser	Leu							
			180					185							

&lt;210&gt; 7953

&lt;211&gt; 209

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7953

Glu	Ile	Met	Lys	Leu	Asn	Tyr	Leu	Leu	Ile	Leu	Ile	Ile	Cys	Val	Leu
1				5					10					15	
Leu	Leu	Cys	Phe	Asn	Leu	Tyr	Ile	Phe	Lys	Gln	Asn	Ser	Ala	Ser	Asp
			20					25					30		
Arg	Met	Gln	Asp	Thr	Ile	Ile	Arg	Leu	Ala	Tyr	Glu	Asp	Ser	Ile	Lys
			35				40					45			
Glu	Ser	Ser	His	Arg	Ile	Glu	Arg	Glu	Ile	Arg	Asn	Tyr	Glu	Leu	Arg
	50					55					60				
Thr	Asn	Gly	Lys	Val	Met	Asn	Pro	Leu	Phe	Glu	Val	Phe	Asp	Thr	Asn
65					70					75					80
Gly	Asp	Lys	Arg	Thr	Leu	Ser	Lys	Ile	Ile	Asp	Gly	Asn	Lys	Phe	Val
				85					90					95	
Leu	Arg	Tyr	Ser	Glu	Leu	Asn	Cys	Asn	Thr	Cys	Val	Asn	Lys	Gln	Ile
				100				105						110	
Glu	Leu	Leu	Asn	Leu	Tyr	Val	Asp	Ser	Ile	Gly	Val	Asp	His	Ile	Ile
			115				120					125			
Leu	Leu	Thr	Asn	Tyr	Asp	Ser	Asn	Phe	Tyr	Met	Lys	Gln	Phe	Lys	Arg
			130				135				140				
Ile	Ser	Lys	Ile	Lys	Tyr	Pro	Ile	Phe	Asn	Ile	Gly	Ala	Asn	Leu	Asn
145					150					155					160
Glu	Cys	Ile	Pro	Asp	Ile	Glu	Arg	Pro	Tyr	Phe	Phe	Ile	Ile	Asp	Ser
				165					170					175	
Asn	Phe	Arg	Ile	Asn	Ser	Val	Tyr	Val	Pro	Gln	Ile	Asp	Glu	Ser	Asn
			180				185						190		
Val	Thr	Lys	Thr	Tyr	Phe	His	Arg	Ile	Leu	Gln	Tyr	Tyr	Phe	Asp	Ile
			195				200					205			

Pro

&lt;210&gt; 7954

&lt;211&gt; 291

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7954

Ser	Lys	Met	Lys	Lys	Val	Ser	Ile	Leu	Ala	Ala	Val	Ala	Met	Ala	Thr
1				5					10					15	
Gly	Leu	Ala	Ser	Cys	Thr	Ala	Gln	Ala	Pro	Lys	Ala	Thr	Leu	Lys	Thr
			20					25					30		
Asp	Val	Asp	Ser	Leu	Ser	Tyr	Ala	Ile	Gly	Ile	Ser	Gln	Thr	Gln	Gly
			35				40					45			
Leu	Lys	Asp	Tyr	Leu	Ser	Gln	Arg	Met	Glu	Met	Asp	Thr	Thr	Tyr	Met
	50					55					60				
Ala	Asp	Phe	Leu	Lys	Gly	Val	Asn	Asp	Ala	Ala	Asn	Lys	Thr	Ser	Lys
65					70					75					80
Lys	Asp	Gln	Ala	Tyr	Leu	Leu	Gly	Leu	Gln	Ile	Gly	Ser	Gln	Met	Ala

				85					90					95
Gly	Pro	Gln	Ala	Ile	Lys	Gly	Met	Asn	His	Gln	Leu	Phe	Ala	Asp
			100					105					110	Asp
Ser	Thr	Met	Thr	Val	Asn	Lys	Gly	Asp	Ile	Leu	Ala	Gly	Val	Phe
		115					120					125		Ala
Gly	Val	Leu	Asn	Lys	Asp	Met	Lys	Met	Arg	Pro	Glu	Glu	Ala	Gln
		130				135					140			Val
Leu	Ile	Gln	Lys	Met	Met	Glu	Ser	Ile	Lys	Gly	Lys	Ala	Ala	Glu
		145			150					155				160
Lys	Tyr	Ala	Asp	Asn	Lys	Ala	Ala	Gly	Glu	Lys	Phe	Leu	Ala	Glu
			165					170						Asn
Lys	Thr	Lys	Glu	Gly	Val	Lys	Thr	Thr	Ala	Ser	Gly	Leu	Gln	Tyr
		180					185						190	Lys
Val	Ile	Thr	Glu	Gly	Lys	Gly	Glu	Ile	Pro	Asn	Asp	Thr	Cys	Lys
		195					200				205			Val
Lys	Val	Asn	Tyr	Arg	Gly	Lys	Leu	Ile	Asp	Gly	Thr	Glu	Phe	Glu
		210				215					220			Ser
Thr	Tyr	Glu	Arg	Lys	Glu	Pro	Phe	Val	Thr	Asn	Val	Gly	Gly	Val
		225			230				235					Ile
Lys	Gly	Trp	Thr	Glu	Ala	Leu	Lys	Met	Met	Pro	Val	Gly	Ser	Lys
			245					250					255	Trp
Glu	Leu	Tyr	Ile	Pro	Gln	Glu	Leu	Ala	Tyr	Gly	Ser	Arg	Asp	Met
		260					265					270		Gly
Gln	Ile	Lys	Pro	Phe	Ser	Thr	Leu	Ile	Phe	Glu	Ile	Glu	Leu	Leu
		275					280					285		Asp
Ile	Glu	Lys												
		290												

&lt;210&gt; 7955

&lt;211&gt; 504

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7955

Arg	Lys	Met	Lys	Ile	Lys	Ile	Leu	Phe	Phe	Ile	Cys	Ile	Val	Leu	Ser
1			5					10						15	
Ser	Ile	Asp	Ile	Thr	Asn	Ala	Gln	Asn	Ile	Val	Thr	Lys	Lys	Thr	Tyr
		20						25					30		
Trp	Asp	Trp	Gly	Asn	Ser	Arg	Leu	His	Glu	Ile	Phe	Thr	Val	Ile	Ala
		35					40					45			
Gly	Thr	Gly	Thr	Arg	His	Gly	Ser	Tyr	Lys	Glu	Tyr	Asp	Lys	Asn	Gly
		50				55					60				
Met	Leu	Leu	Ile	Ser	Ala	Asn	Tyr	Asn	His	Gly	Ala	Leu	His	Gly	Leu
		65			70				75					80	
Cys	Val	Gly	Tyr	Phe	Gly	Thr	Pro	Gln	Asn	Tyr	Ile	Ser	Lys	Ser	Thr
			85						90					95	
Asn	Tyr	Leu	Asn	Gly	Glu	Lys	Asn	Gly	Val	Glu	Lys	Asn	Tyr	Asn	Leu
		100					105						110		
Gly	Ser	Ser	Gly	His	Tyr	Leu	Ile	Glu	Glu	Cys	Val	Tyr	Lys	Lys	Asp
		115					120					125			
Glu	Met	Ile	Glu	Lys	Thr	Ser	Tyr	Tyr	Thr	Asp	Val	Lys	Tyr	Lys	Gly
		130				135					140				
Arg	Lys	Lys	Ser	His	Ala	Lys	Leu	Val	Asp	Asp	Lys	Gln	Phe	Asn	Thr
		145			150					155					160
Asn	Trp	Tyr	Gln	Asn	Gly	Gln	Ile	Glu	Tyr	Glu	Gly	Val	Leu	Gln	Val
			165					170						175	
Thr	Pro	Gly	Asn	Tyr	Gly	Asn	Val	Thr	Thr	Pro	Ile	Gln	Tyr	Thr	Arg
		180						185					190		
Tyr	Ser	Glu	Ala	Gly	Ala	Leu	Met	Glu	Lys	Leu	Asn	Asp	Asn	Ile	Ile

195 200 205  
 Ser Phe Tyr Ala Glu Asp Gly Lys Thr Ile Thr Gln Lys Glu Asn Leu  
 210 215 220  
 Ser Thr Asp Val Ile Glu Tyr Tyr Asp Asn Gly Thr Leu Thr Lys Ser  
 225 230 235 240  
 Ile Lys Ile Leu Lys Glu Asp Gly Asp Glu Tyr Tyr Glu Val Ser Leu  
 245 250 255  
 Tyr Lys Asn Asn Ser Ile Tyr Ser Lys Lys Val Val Asp Arg Asn Gly  
 260 265 270  
 Asn Asp Ala Glu Leu Ile Lys Lys Glu Lys Gln Leu Ala Leu Gln Tyr  
 275 280 285  
 Asp Ser Leu Tyr Asn Arg Leu Lys Glu Met Leu His Ser Asn Val Ser  
 290 295 300  
 Met Asn Ile Thr Lys Met Val Phe Ala Asn Pro Asp Arg Val Tyr Cys  
 305 310 315 320  
 Arg Lys Gly Gln Tyr Glu Ser Ser Gly Lys Phe Ser Ala Leu Glu Ala  
 325 330 335  
 Ile Ile Arg Thr His Glu Lys Glu Leu Asp Asp Val Val Arg Gln Arg  
 340 345 350  
 Asn Glu Tyr Thr Glu Arg Gly Phe Lys Arg Asn Asp Gly Lys Tyr Tyr  
 355 360 365  
 Lys Ser Val Glu Gln Ile Lys Glu Tyr Ile Asp Lys Ile Ser Gln Asn  
 370 375 380  
 Phe Met Gln Lys Tyr Asp Thr Leu Ser Val Met Lys Lys Ile Ala Glu  
 385 390 395 400  
 Gln Ile Asn Asp Asp Leu Tyr Tyr Ile Glu Cys Ser Tyr Thr Tyr Tyr  
 405 410 415  
 Thr Gly Gln Gln Gly Tyr Lys Asp Asn Val Pro Gly Lys His Lys Asn  
 420 425 430  
 Ala Tyr Lys Ala Tyr Ile Ser Thr Thr Glu Tyr Leu Thr Ser Asn Met  
 435 440 445  
 Glu Gly Lys Asn Leu Ser Glu Thr Leu Thr Met Leu Gln Gln Tyr Ala  
 450 455 460  
 Thr Ile Ser Ser Lys Met Arg Lys Trp Tyr Asn Met Lys Ile Thr Pro  
 465 470 475 480  
 Ile Glu Lys Leu Phe Lys Lys Thr Glu Ile Pro Glu Thr Gln Leu Asn  
 485 490 495  
 Ile Phe Met Asn Asn Asp Val Glu  
 500

&lt;210&gt; 7956

&lt;211&gt; 466

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7956

Phe Leu Met Lys His Phe Thr Gly Ile Leu Phe Leu Leu Leu Leu Cys  
 1 5 10 15  
 Phe Ser Cys Thr Pro Val His Asp Ala Pro Leu Glu Gln Ala Leu Thr  
 20 25 30  
 Leu Ala Gly Asp Asn Arg Lys Glu Leu Gln Gln Val Leu Gly His Tyr  
 35 40 45  
 Glu Gly Asp Ser Leu Lys His Lys Ala Ala Cys Phe Leu Ile Glu Asn  
 50 55 60  
 Met Ile Gly Lys Gly Thr Ile Arg Tyr Leu Leu Arg Glu Ser Asp Ser  
 65 70 75 80  
 Cys Tyr Ile Arg Gln Glu Pro Glu Pro Asp Leu Thr Cys Ile Thr Ala  
 85 90 95  
 Asp Tyr Leu Ile Glu Asn Ile Asp Leu Ala Phe Glu Val Trp Gln Lys



100 105 110  
 Tyr Pro Trp Cys Lys Gln Leu Ser Phe Arg Glu Phe Cys Arg Asn Ile  
 115 120 125  
 Leu Pro Tyr Arg Leu Lys Gln Glu Pro Leu Asp Arg Trp Arg Ser Tyr  
 130 135 140  
 Tyr Tyr Thr Arg Tyr Lys Met Thr Val Asp Ser Leu Ala Arg Ala Gly  
 145 150 155 160  
 Ala Thr Met Arg Glu Ile Val Phe Phe Phe Asn Ser Arg His Gly Lys  
 165 170 175  
 Lys Tyr Leu His Asp Ala Ala Lys Ile Pro Gly Asp Phe Ser Ile Glu  
 180 185 190  
 Leu Ile Glu Lys Leu Gly Gly Gly Thr Cys Asp His Leu Ala Leu Asn  
 195 200 205  
 Ala Val Gln Leu Met Arg Ala Val Gly Ile Pro Leu Asn Leu Asp Ile  
 210 215 220  
 Leu Pro Tyr His Gly Lys Val Asn Gly Gly His Ala Tyr Asn Ser Phe  
 225 230 235 240  
 Thr Asp Glu Asn Gly Lys Phe Phe Tyr Phe Ser Pro Tyr Glu Arg Glu  
 245 250 255  
 Pro Glu Arg Asn Gln Trp Ile Ala Pro Leu Ile Gln Arg Val Cys Tyr  
 260 265 270  
 Glu Arg Gln Pro Glu Pro Lys Ile Gly Arg Asn Arg Trp Asn Ala Gln  
 275 280 285  
 Leu Val Asn Arg Leu Leu Lys Glu Val Thr Ala Glu Tyr Tyr Leu Ser  
 290 295 300  
 Asp Ser Val Arg Leu Pro Val His Thr Ser Asp Thr Val Ala Tyr Ile  
 305 310 315 320  
 Ala Thr Phe Asn Arg Gly Ala Phe Lys Val Val Ser Gln Gly Arg Val  
 325 330 335  
 Glu Ser Asn Ser Val Leu His Arg Val Leu Pro Tyr Gly Leu Leu Tyr  
 340 345 350  
 Phe Gln Met Ala Asp Lys Lys Gly Lys Leu Val Pro Thr Gly Ser Pro  
 355 360 365  
 Phe Val Met Thr Pro Asp Ser Ile His Phe Ile Thr Pro Ile Arg Gln  
 370 375 380  
 Thr Thr Val Leu Asn Gly Ile Leu Thr Tyr Asp Val Lys Arg Val Leu  
 385 390 395 400  
 Glu Leu Gly Asp Glu Ala Tyr Thr Leu Tyr Tyr Trp Lys Asp Gly Trp  
 405 410 415  
 Gln Pro Val Lys Glu Val Thr Ser Lys Asp Ser Arg Thr Leu Asp Phe  
 420 425 430  
 Gly Glu Val Pro Val Arg Ser Leu Phe Leu Val Cys Gly Asn Thr Tyr  
 435 440 445  
 Met Gly Arg Met Gln Arg Pro Phe Leu Leu Glu Asp Gly Lys Pro Val  
 450 455 460  
 Tyr Tyr  
 465

&lt;210&gt; 7957

&lt;211&gt; 119

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7957

Thr Tyr Lys Asn Met Asn Asn Lys Asn Ile Phe Thr Gln Asn Cys Val  
 1 5 10 15  
 Lys Tyr Ser Leu Lys Asn Ala Thr Gln Glu Phe Ser Leu Ile Arg Leu  
 20 25 30  
 Arg Met Thr Ile Gly Gly Val Arg Phe Ser Tyr Cys Leu Pro Val Glu

	35		40		45	
Tyr	Lys	Ile	Lys	Ser	Ser	Phe
	50					55
Glu	Asp	Ala	Lys	Arg	Asn	Thr
65					70	
Val	Ala	Leu	Arg	Asn	Ile	Asn
				85		
Leu	Ile	Lys	Gln	Lys	Pro	Gly
		100				105
Arg	Arg	Val	Asp	Lys	Gly	Thr
	115					

&lt;210&gt; 7958

&lt;211&gt; 370

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7958

Asn	Ile	Asn	Leu	Lys	Thr	Asn	Ile	Met	Arg	Lys	Ala	Leu	Leu	Thr	Val
1			5					10						15	
Ile	Ser	Phe	Thr	Leu	Cys	Leu	Tyr	Ile	Thr	Ser	Cys	Ser	Gln	Ser	Ser
			20					25					30		
Lys	Pro	Glu	Lys	Ala	Arg	Thr	Ile	Glu	Thr	Ile	Ala	Thr	Asp	Ala	Gln
		35					40					45			
Gln	Thr	Leu	Ser	Phe	Asn	His	Glu	Pro	Leu	Ser	Ile	Asp	Pro	Ile	Gly
	50					55					60				
Ile	Gly	Asp	Ile	Ile	Val	Thr	Asp	Thr	Phe	Leu	Ile	Leu	Ala	Leu	Asn
65					70				75						80
Lys	Glu	Glu	Asn	Met	Leu	His	Val	Tyr	Asn	Leu	Pro	His	Leu	Gln	Phe
				85				90						95	
Leu	Gly	Ser	Phe	Gln	Lys	Ile	Gly	Asn	Gly	Pro	Asp	Glu	Val	Ile	Leu
			100					105					110		
Pro	Ser	Ala	Phe	Thr	Gln	Trp	Phe	Asn	Lys	Asp	Gly	Gln	Ile	Gln	Leu
		115					120					125			
Val	Met	Arg	Ser	Tyr	Gln	Lys	Phe	Thr	Gly	Leu	Leu	Asn	Ile	Ser	Lys
	130					135					140				
Ser	Leu	Ile	Glu	Asn	Lys	Ala	Ile	Tyr	Asp	Asn	Lys	Tyr	Thr	Tyr	Asn
145					150					155					160
Ala	Pro	Lys	Gly	Lys	Asn	Ser	Phe	Gln	Gln	Ser	Ser	Val	Ser	Tyr	Leu
				165					170					175	
Leu	Gly	Asp	Ser	Ile	Phe	Leu	Ile	Asn	Arg	Ser	Ile	Ile	Met	Arg	Pro
		180						185					190		
Gln	Asp	Asn	Gln	Asn	Asp	Phe	Phe	Glu	Val	Tyr	Asp	Tyr	Lys	Asn	Asp
	195						200					205			
Ser	Ile	Leu	Arg	Ser	Phe	Tyr	Ala	Ser	Asn	Phe	Pro	Lys	Glu	Leu	Leu
	210					215					220				
Glu	His	His	Gly	Arg	Asp	Gln	Ala	Phe	Gln	Lys	Asp	Ile	Ala	Ile	Ser
225					230					235					240
Asn	Asp	Cys	Lys	Lys	Met	Val	Ile	Ala	Tyr	Arg	Phe	Leu	Asn	Met	Ile
				245					250					255	
Ser	Ile	Val	Asn	Ile	Glu	Lys	Glu	Glu	Ile	Asn	Asn	Leu	Phe	Thr	Asp
			260					265					270		
Gly	Asn	Lys	Leu	Asn	Trp	Glu	Gln	Val	Ile	Glu	Gly	Thr	Pro	Lys	Pro
	275						280					285			
Tyr	Tyr	Thr	Lys	Val	His	Cys	Asn	Asn	Ala	Tyr	Ile	Trp	Ala	Met	Ala
	290					295					300				
Ile	Glu	Gly	Glu	Asp	Pro	Ser	Thr	Phe	Arg	Ser	Arg	Leu	Asp	Ile	Phe
305					310					315					320
Asp	Trp	Lys	Gly	Asn	Tyr	Leu	Cys	Lys	Ala	His	Leu	Asp	Lys	Trp	Val

325 330 335  
 Ser Ser Phe Ser Ile Asp Glu Arg Asn Gln Thr Met Tyr Ala Val Thr  
 340 345 350  
 Ala Asp Asp Met Leu Val Arg Tyr Asn Ile Lys Glu Leu Leu Asp Gln  
 355 360 365  
 Leu Pro  
 370

<210> 7959  
 <211> 355  
 <212> PRT  
 <213> B.fragilis

<400> 7959  
 Ile Val Tyr Asp Asn Tyr Pro Lys Tyr Asp Ser Phe Val Arg Met Lys  
 1 5 10 15  
 Trp Asn Val Leu Leu Tyr Gly Leu Leu Phe Ser Gly Leu Gly Ile Phe  
 20 25 30  
 Ser Tyr Leu Leu Leu Val Asn Tyr Thr Glu Leu Thr Pro Lys Val Ala  
 35 40 45  
 Asp Val Leu Tyr Ser Lys Gly Ala Phe Val Phe Phe Ile Thr Ala Phe  
 50 55 60  
 Asn Val Leu Gly Tyr Ser Thr Leu Arg Ile Ser Ser Trp Ile Asn Thr  
 65 70 75 80  
 Gln Tyr Ala Leu Asn Ile Arg His Arg Trp Lys Ile Ile Val Ile Tyr  
 85 90 95  
 Val Ala Val Ile Leu Leu Phe Leu Leu Leu Asn Tyr Ser Leu Leu Ile  
 100 105 110  
 Ala Ala Lys Leu Leu Ala Gly Ile Asp Asn Leu Phe Thr Phe Ser Asn  
 115 120 125  
 Gly Gly Trp Arg Ile Leu Ile Val Val Trp Leu Val Glu Leu Val Ile  
 130 135 140  
 Val Gly Leu Leu Leu Ala Asn Arg Ser Ile Gln Asn Asn Leu Lys Leu  
 145 150 155 160  
 Gln Gln Glu Ala Ala Lys Leu Gln Thr Glu Asn Asp Thr Ala Arg Tyr  
 165 170 175  
 Ala Ala Leu Gln Ser Gln Leu Asn Pro His Phe Leu Phe Asn Ser Leu  
 180 185 190  
 Asn Thr Leu Ile Ala Glu Ile Glu Tyr Asn Pro Gly Asn Ala Val His  
 195 200 205  
 Phe Thr Lys His Leu Ser Ser Val Tyr Arg Tyr Val Leu Gln Cys Gln  
 210 215 220  
 Asp Lys Thr Leu Val Thr Leu Thr Glu Glu Leu Glu Phe Leu Gln Ser  
 225 230 235 240  
 Tyr Leu Phe Leu His Lys Val Arg Leu Gly Asp Cys Ile Ser Cys Asn  
 245 250 255  
 Cys Cys Ile Ala Ser Gly Tyr Thr Ser Cys Met Leu Pro Pro Leu Thr  
 260 265 270  
 Leu Gln Leu Leu Ala Glu Asn Val Ile Asn His Asn Ser Ile Thr Leu  
 275 280 285  
 Ser Lys Pro Met Lys Ile Asp Ile Arg Leu Glu Glu Tyr Leu Ala  
 290 295 300  
 Val Ser Asn Pro Ile Gln Pro Lys Lys Ser His Glu Ser Pro Gly Val  
 305 310 315 320  
 Gly Leu Lys Asn Leu Ser Asn Arg Cys Gln Leu Met Leu Gly Lys Glu  
 325 330 335  
 Ile Ile Val His Asn Asp Glu Lys Val Phe Ile Val Lys Val Pro Leu  
 340 345 350  
 Leu Tyr Glu

355

<210> 7960  
 <211> 380  
 <212> PRT  
 <213> B.fragilis

<400> 7960

Arg	Leu	Asn	Glu	Cys	Arg	Phe	Lys	Arg	His	Leu	Ser	Lys	Arg	Lys	Tyr
1				5					10					15	
Gln	Lys	Gly	Arg	Ile	Gln	Ile	Phe	Lys	Thr	Val	Asn	Thr	Ile	Phe	Tyr
			20					25					30		
Thr	Ser	Met	Asn	Thr	Ile	Lys	Ile	Asp	Gln	Gln	Leu	Lys	Arg	Ile	Gln
		35					40					45			
Ile	Lys	Glu	Phe	Glu	Ile	Glu	Asn	Glu	Ile	Val	Phe	Asn	Phe	Phe	Asn
	50					55					60				
Arg	Ile	Ser	Ala	Ser	Glu	Arg	Asp	Asp	Lys	Leu	Val	Gln	Ala	Ile	Tyr
65					70					75					80
Ile	Gly	Ile	Leu	Ala	Leu	Met	Glu	Asp	Arg	Phe	Ser	Ser	Phe	Leu	Ser
				85					90					95	
Lys	Thr	Ser	Asn	Glu	Leu	Gly	Ala	Glu	Leu	Glu	Ser	Leu	Lys	Met	Ile
			100					105					110		
Phe	Asp	Met	Lys	Lys	Glu	Val	Phe	Tyr	Lys	Ser	Ser	Ile	Lys	Gly	Ile
	115						120						125		
Leu	Ala	Glu	Asn	Asp	Ile	Ala	Glu	Phe	Leu	Ile	Asp	His	Phe	Lys	Asp
	130					135					140				
Lys	Lys	Ile	Ser	Asp	Glu	Val	Phe	Leu	Thr	Gly	Asn	Ile	Ala	Gly	Lys
145					150					155					160
Leu	Ser	Lys	Asn	Lys	Thr	Gly	Asp	Ile	Val	Cys	Cys	Ile	Glu	Gly	Lys
				165					170					175	
Glu	Glu	Gln	Lys	Ile	Val	Ile	Glu	Cys	Lys	Phe	Asp	Lys	Ser	Ile	Arg
			180					185					190		
Leu	Gly	Asp	Ile	Glu	Ser	Lys	Asp	Ile	Phe	Thr	Arg	Lys	Thr	Asp	Thr
		195					200					205			
Ala	Trp	Ser	Gln	Leu	Leu	Glu	Ala	Gln	Val	Asn	Arg	Glu	Ala	Gln	Val
	210					215					220				
Gly	Ile	Ile	Val	Leu	Asp	Ile	Ser	Leu	Val	Asp	Asn	Ser	Val	Phe	Lys
225					230					235					240
Lys	Tyr	Glu	Asn	Ile	Gly	Tyr	Ile	Pro	Asn	Val	Gly	Phe	Ile	Ala	Ile
				245					250					255	
Ile	Asp	Ser	Gln	Lys	Gly	Asp	Tyr	Ser	Asn	Leu	Ser	Ile	Ala	Tyr	Phe
			260					265					270		
Leu	Ala	Arg	Asp	Ile	Ile	Leu	Asn	Ser	His	Lys	Val	Glu	Phe	Asn	Lys
		275					280					285			
Asp	Ile	Leu	Thr	Ile	Ile	Val	Gly	Arg	Ile	Ile	Lys	Asp	Ile	Asn	Glu
	290					295					300				
Ile	Lys	Thr	Ile	Lys	Ser	Cys	Val	Ile	Asn	Asn	Ile	Glu	Asn	Asn	Lys
305					310					315					320
Ile	Ile	Leu	Arg	Gln	Leu	Glu	Lys	Ser	Met	Leu	Leu	Met	Glu	Phe	Asn
				325				330						335	
Gln	Glu	Tyr	Leu	Ile	Lys	Phe	Leu	Lys	Asp	Gly	Thr	Leu	Thr	Lys	Glu
			340					345					350		
Asp	Leu	Leu	Glu	Phe	Tyr	Gln	Gly	Glu	Thr	Ile	Lys	Glu	Arg	Tyr	Lys
	355						360					365			
Ile	Ile	Glu	Lys	Glu	Ile	Asp	Asn	Glu	Phe	Ser	Ser				
	370					375					380				

<210> 7961  
 <211> 384

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7961

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Thr Glu Cys Glu Ile Ala Asn Cys Met Glu Glu Asn Ser Ile Lys Ile
1      5      10      15
His Lys Trp Leu Tyr Pro Ala Ser Trp Leu Tyr Gly Ala Gly Val Ala
20      25      30
Leu Arg Asn Lys Leu Phe Asp Trp Gly Lys Leu Gln Ser Lys Ser Phe
35      40      45
Asn Val Pro Ile Ile Cys Ile Gly Asn Ile Ala Val Gly Gly Thr Gly
50      55      60
Lys Thr Pro His Thr Glu Tyr Leu Ile Lys Leu Leu His Asp Glu Phe
65      70      75      80
Gln Val Ala Val Leu Ser Arg Gly Tyr Lys Arg His Thr Lys Gly Phe
85      90      95
Val Leu Ser Thr Ala Glu Ser Asp Ala Arg Ser Ile Gly Asp Glu Pro
100     105     110
Tyr Gln Ile Gln Ser Lys Phe Ser Asp Ile Arg Val Ala Val Asp Glu
115     120     125
Asp Arg Cys His Gly Ile Glu Arg Leu Leu Thr Leu Lys Glu Pro Pro
130     135     140
Val Glu Val Ile Leu Leu Asp Asp Ala Phe Gln His Arg Tyr Val Lys
145     150     155     160
Ala Gly Leu Asn Ile Leu Leu Thr Asp Tyr His Arg Leu Phe Cys Asp
165     170     175
Asp Thr Leu Met Pro Ala Gly Arg Leu Arg Glu Ser Ala Gln Gly Lys
180     185     190
Asn Arg Ala Gln Ile Val Ile Val Thr Lys Cys Pro Pro Asp Ile Lys
195     200     205
Pro Ile Asp Tyr Asn Ile Ile Thr Lys Arg Leu Asn Leu Phe Pro Tyr
210     215     220
Gln Gln Leu Tyr Phe Ser Ser Phe Arg Tyr Gly Asn Leu Arg Ala Val
225     230     235     240
Phe Pro Asp Cys Ala Thr Val Gln Glu Arg Lys Leu Ser Ser Leu Gln
245     250     255
Thr Glu Glu Gln Ile Leu Leu Ile Thr Gly Ile Ala Ser Pro Asp Thr
260     265     270
Ile Ile Arg Glu Leu Glu Ile His Thr Arg Asn Ile Asp Leu Leu Ala
275     280     285
Phe Ser Asp His His Asn Phe Ser Gln Arg Asp Leu Ala Gln Ile Lys
290     295     300
Glu Arg Phe Gly Lys Leu Arg Lys Gly Gln Arg Leu Ile Val Thr Thr
305     310     315     320
Glu Lys Asp Ala Thr Arg Leu Ile Cys His Gln Glu Leu Asp Glu Gly
325     330     335
Leu Lys Pro Phe Ile Tyr Ala Leu Pro Ile Glu Val Glu Ile Leu Gln
340     345     350
Asn Gln Gln Asp Asn Phe Asn Gln His Ile Ile Gly Tyr Val Arg Glu
355     360     365
Asn Thr Arg Asn Gly Ser Leu Pro Glu Arg Lys Asp Ala His Lys Ser
370     375     380

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&lt;210&gt; 7962

&lt;211&gt; 1087

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7962

Cys	Met	Thr	Glu	Lys	Thr	Asn	Leu	Phe	Pro	Asn	Leu	Ile	Arg	Phe	Arg
1				5					10					15	
Glu	Thr	Asn	Arg	Leu	Lys	Met	Ala	Ile	Ala	Ala	Ser	Ile	Met	Leu	Trp
			20					25					30		
Cys	Ala	Thr	Pro	Gln	Gln	Ala	Ala	Ala	Asp	Thr	Tyr	Glu	Lys	His	Glu
		35					40					45			
Ile	Ala	Ser	Val	Gln	Gln	Gln	Lys	Val	Lys	Thr	Thr	Gly	Thr	Val	Leu
	50					55					60				
Asp	Gln	Asn	Gly	Glu	Ala	Met	Ile	Gly	Val	Ser	Val	Lys	Val	Lys	Asp
65					70					75					80
Asn	Ala	Thr	Met	Gly	Thr	Ile	Thr	Asp	Leu	Glu	Gly	Lys	Phe	Ser	Ile
				85					90					95	
Asp	Ala	Pro	Lys	Gly	Ala	Thr	Leu	Glu	Ile	Ser	Tyr	Ile	Gly	Tyr	Lys
			100					105					110		
Thr	Val	Thr	Val	Lys	Ala	Glu	Gly	Thr	Ala	Leu	His	Ile	Thr	Met	Lys
		115					120					125			
Glu	Asp	Ala	Glu	Val	Leu	Asp	Glu	Val	Val	Ile	Val	Gly	Tyr	Gly	Ser
	130					135					140				
Gln	Lys	Lys	Val	Asn	Val	Thr	Gly	Ala	Val	Gly	Met	Val	Asn	Ser	Glu
145					150					155					160
Val	Leu	Glu	Ala	Arg	Pro	Val	Gln	Asn	Val	Ser	Gln	Ala	Leu	Gln	Gly
				165					170					175	
Val	Val	Pro	Gly	Leu	Asn	Leu	Ser	Val	Gly	Asn	Ser	Gly	Gly	Ala	Leu
		180						185					190		
Asp	Ser	Ser	Met	Ser	Ile	Asn	Ile	Arg	Gly	Ala	Gly	Thr	Ile	Gly	Asp
		195				200						205			
Gly	Ser	Gly	Ser	Ser	Pro	Leu	Ile	Leu	Ile	Asp	Gly	Ile	Glu	Gly	Asp
	210					215					220				
Leu	Asn	Ser	Val	Asn	Pro	Asn	Asp	Ile	Glu	Asn	Val	Ser	Val	Leu	Lys
225					230					235					240
Asp	Ala	Ala	Ser	Ala	Ser	Ile	Tyr	Gly	Ala	Arg	Ala	Ala	Phe	Gly	Val
				245					250					255	
Ile	Leu	Val	Thr	Thr	Lys	Ser	Gly	Lys	Ser	Gly	Lys	Ala	Lys	Val	Ser
			260					265					270		
Tyr	Asn	Gly	Asn	Val	Arg	Phe	Ser	Asp	Ala	Leu	Cys	Val	Pro	Glu	Met
	275						280					285			
Met	Asp	Ser	Tyr	Gln	Phe	Ala	Leu	Tyr	Phe	Asn	Arg	Ala	Ala	Glu	Asn
	290					295					300				
Ala	Gly	Asp	Ser	Gly	Pro	Phe	Ser	Gln	Glu	Ala	Leu	Asp	Arg	Ile	Leu
305					310					315					320
Ala	Tyr	Gln	Ala	Gly	Thr	Leu	Lys	Glu	Thr	Met	Thr	Met	Asn	Glu	Gln
				325					330					335	
Thr	Arg	Lys	Trp	Gln	Ala	Tyr	Gly	Gly	Ala	Asn	Ala	Asn	Thr	Asp	Trp
			340					345					350		
Phe	Lys	Glu	Phe	Tyr	Asn	Asp	Trp	Val	Pro	Ser	Gln	Glu	His	Ser	Leu
		355					360					365			
Ser	Ile	Ser	Gly	Gly	Ser	Glu	Lys	Thr	Gln	Tyr	Thr	Ile	Ser	Gly	Ser
	370					375					380				
Phe	Leu	Asp	Gln	Asn	Gly	Leu	Leu	Arg	His	Gly	Ser	Asp	Asn	Phe	Gln
385					390					395					400
Arg	Tyr	Thr	Met	Asn	Gly	Lys	Ile	Thr	Ser	Gln	Ile	Ala	Asp	Trp	Phe
				405					410					415	
Thr	Val	Thr	Tyr	Ser	Thr	Lys	Trp	Thr	Arg	Glu	Asp	Phe	Asp	Arg	Pro
		420						425					430		
Ser	Tyr	Leu	Thr	Gly	Leu	Phe	Phe	His	Asn	Ile	Ala	Arg	Arg	Trp	Pro
		435					440					445			
Thr	Asn	Pro	Ala	Tyr	Asp	Pro	Asn	Gly	His	Pro	Val	Asp	Gly	Met	Glu
	450					455					460				
Ile	Glu	Gln	Leu	Glu	Asn	Gly	Gly	Lys	Gln	Ile	Asn	Gln	Lys	Asp	Leu

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500

465 470 475 480  
 Asn Thr Gln Gln Leu Gln Phe Ile Phe Glu Pro Ile Lys Asn Trp Arg  
 485 490 495  
 Ile Asn Val Glu Gly Ser Leu Arg Thr Thr Asn Thr Asn Glu His Trp  
 500 505 510  
 Asp Val Leu Pro Val Tyr Ala Tyr Asn Ala Asp Asn Glu Pro Tyr Leu  
 515 520 525  
 Ile Ser Trp Asn Gly Gly Ala Leu Gly Leu Ser Gln Val Asn Glu Tyr  
 530 535 540  
 Ser Tyr Lys Glu Asn Tyr Tyr Thr Thr Asn Ile Tyr Ser Asp Tyr Phe  
 545 550 555 560  
 Lys Gln Phe Asp Ser Gly His Tyr Phe Lys Val Met Ala Gly Phe Asn  
 565 570 575  
 Ser Glu Leu Tyr Lys Thr Arg Tyr Val Gln Ala Gln Lys Ser Thr Leu  
 580 585 590  
 Ile Ser Ser Ser Val Pro Thr Ile Asn Thr Ala Thr Glu Asp Pro Lys  
 595 600 605  
 Ala Trp Gly Gly Tyr Ala His Asn Ala Val Ala Gly Phe Phe Gly Arg  
 610 615 620  
 Ile Asn Tyr Asn Tyr Lys Asp Arg Tyr Met Val Glu Ala Asn Gly Arg  
 625 630 635 640  
 Tyr Asp Gly Ser Ser Arg Phe Ile Gly Asp Lys Arg Trp Gly Phe Phe  
 645 650 655  
 Pro Ser Phe Ser Ala Gly Trp Asn Val Ala Gln Glu Pro Phe Phe Glu  
 660 665 670  
 Arg Ile Ala Glu Lys Cys Ser Ile Gly Thr Leu Lys Leu Arg Ala Ser  
 675 680 685  
 Trp Gly Gln Leu Gly Asn Thr Asp Thr Lys Asp Ala Trp Tyr Pro Phe  
 690 695 700  
 Tyr Gln Thr Met Pro Thr Gly Ser Asn Tyr Gly Trp Leu Leu Asn Gly  
 705 710 715 720  
 Ala Leu Pro Asn Tyr Ala Asn Asn Pro Gly Ile Val Ser Met Lys Lys  
 725 730 735  
 Thr Trp Glu Thr Ile Glu Thr Trp Asp Val Gly Leu Asp Trp Gly Leu  
 740 745 750  
 Phe Asn Asn Arg Leu Thr Gly Ser Phe Asp Tyr Phe Val Arg Tyr Thr  
 755 760 765  
 Tyr Asp Met Ile Gly Pro Ala Pro Glu Leu Ala Ala Ser Leu Gly Thr  
 770 775 780  
 Gly Val Pro Lys Ile Asn Asn Ala Asp Met Lys Ser Tyr Gly Phe Glu  
 785 790 795 800  
 Leu Glu Leu Gly Trp Arg Asp Arg Ile Arg Asp Phe Ser Tyr Gly Val  
 805 810 815  
 Lys Phe Val Leu Ser Asp Ser Gln Gln Lys Ile Leu Lys Tyr Pro Asn  
 820 825 830  
 Glu Asp Tyr Asn Ile Gly Thr Tyr Tyr Arg Gly Gln Lys Leu Asn Asn  
 835 840 845  
 Ile Trp Gly Tyr Lys Thr Ile Gly Ile Ala Gln Ser Gln Glu Glu Met  
 850 855 860  
 Asp Ala His Leu Ala Lys Val Asp Gln Ser Ala Leu Gly Ser Lys Trp  
 865 870 875 880  
 Gly Ala Gly Asp Ile Met Tyr Ala Asp Leu Asp Gly Asp Gly Lys Ile  
 885 890 895  
 Ser Thr Gly Ser Asn Lys Leu Gly Asp Thr Gly Asp Arg Val Ile Leu  
 900 905 910  
 Gly Asn Ser Thr Pro Arg Phe Asn Tyr Gly Leu Thr Ile Asp Ala Ser  
 915 920 925  
 Trp Lys Gly Ile Asp Phe Arg Ala Phe Phe Gln Gly Ile Gly Lys Arg  
 930 935 940

Asp Tyr Trp Leu Gln Gly Pro Tyr Phe Trp Gly Ser Thr Gly Leu Gly  
 945 950 955 960  
 Gln Trp Gln Ala Ala Gly Phe Lys Glu His Trp Asp Phe Trp Arg Pro  
 965 970 975  
 Glu Gly Asp Pro Leu Gly Ala Asn Thr Asn Ala Tyr Tyr Pro Arg Val  
 980 985 990  
 Ala Arg Asn Gly Gly Lys Asn Thr Asn Val Gln Ser Arg Tyr Leu Gln  
 995 1000 1005  
 Asn Ala Ala Tyr Cys Arg Leu Lys Asn Ile Gln Ile Gly Tyr Thr Leu  
 1010 1015 1020  
 Pro Lys Thr Trp Thr Glu Lys Ala Gly Met Ser Ser Val Arg Val Tyr  
 1025 1030 1035 1040  
 Val Ser Gly Asp Asn Leu Leu Thr Phe Ser Asp Ile Thr Gly Ile Phe  
 1045 1050 1055  
 Asp Pro Glu Ala Ile Gly Ser Thr Tyr Asp Ala Asn Asn Gly Lys Leu  
 1060 1065 1070  
 Tyr Pro Leu Gln Arg Val Ile Ser Val Gly Leu Asn Val Asn Phe  
 1075 1080 1085

<210> 7963

<211> 638

<212> PRT

<213> B.fragilis

<400> 7963

Ala Cys Lys Asp Arg His Tyr Leu Leu Ser His Asn Glu Leu Gln Glu  
 1 5 10 15  
 Ile Phe Ser Ile Val Ser Leu Phe Ser Asn Pro Ile Phe Val Pro Leu  
 20 25 30  
 Ser Pro Asn Asn Arg Tyr Tyr Met Gln Asn Ile Arg Asn Ile Ala Ile  
 35 40 45  
 Ile Ala His Val Asp His Gly Lys Thr Thr Leu Val Asp Lys Met Leu  
 50 55 60  
 Leu Ala Gly Asn Leu Phe Arg Gly Asn Gln Thr Ser Gly Glu Leu Ile  
 65 70 75 80  
 Leu Asp Asn Asn Asp Leu Glu Arg Glu Arg Gly Ile Thr Ile Leu Ser  
 85 90 95  
 Lys Asn Val Ser Ile Asn Tyr Asn Gly Thr Lys Ile Asn Ile Ile Asp  
 100 105 110  
 Thr Pro Gly His Ser Asp Phe Gly Gly Glu Val Glu Arg Val Leu Asn  
 115 120 125  
 Met Ala Asp Gly Cys Ile Leu Leu Val Asp Ala Phe Glu Gly Pro Met  
 130 135 140  
 Pro Gln Thr Arg Phe Val Leu Gln Lys Ala Leu Glu Ile Gly Leu Lys  
 145 150 155 160  
 Pro Ile Val Val Ile Asn Lys Val Asp Lys Pro Asn Cys Arg Pro Asp  
 165 170 175  
 Glu Val His Glu Met Val Phe Asp Leu Met Phe Ser Leu Asp Ala Thr  
 180 185 190  
 Glu Glu Gln Leu Asp Phe Pro Thr Ile Tyr Gly Ser Ala Lys Asn Asn  
 195 200 205  
 Trp Met Ser Thr Asp Trp Lys Glu Gln Thr Asp Ser Ile Val Pro Leu  
 210 215 220  
 Leu Asp Cys Ile Val Glu Asn Ile Pro Ala Pro Glu Gln Leu Glu Gly  
 225 230 235 240  
 Thr Pro Gln Met Leu Ile Thr Ser Leu Asp Tyr Ser Ser Tyr Thr Gly  
 245 250 255  
 Arg Ile Ala Val Gly Arg Val His Arg Gly Thr Leu Lys Glu Gly Met  
 260 265 270



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Asn Val Ser Leu Ala Lys Arg Asp Gly Ser Ile Val Lys Ser Lys Ile
 275                               280           285
Lys Glu Val His Val Phe Glu Gly Leu Gly Arg Val Lys Thr Thr Glu
 290                               295           300
Val Ser Ser Gly Asp Ile Cys Ala Leu Val Gly Ile Asp Gly Phe Glu
 305                               310           315           320
Ile Gly Asp Thr Ile Cys Asp Tyr Glu Asn Pro Glu Ala Leu Pro Pro
 325                               330           335
Ile Ala Ile Asp Glu Pro Thr Met Ser Met Leu Phe Ala Ile Asn Asp
 340                               345           350
Ser Pro Phe Tyr Gly Lys Asp Gly Lys Phe Val Thr Ser Arg His Ile
 355                               360           365
His Asp Arg Leu Thr Lys Glu Leu Asp Lys Asn Leu Ala Leu Arg Val
 370                               375           380
Arg Lys Ser Glu Glu Asp Gly Lys Trp Val Val Ser Gly Arg Gly Val
 385                               390           395           400
Leu His Leu Ser Val Leu Ile Glu Thr Met Arg Arg Glu Gly Tyr Glu
 405                               410           415
Leu Gln Val Gly Gln Pro Gln Val Ile Tyr Lys Glu Ile Asp Gly Val
 420                               425           430
Lys Cys Glu Pro Ile Glu Glu Leu Thr Ile Asn Val Pro Glu Glu Tyr
 435                               440           445
Ser Ser Lys Ile Ile Asp Met Val Thr Arg Arg Lys Gly Glu Met Thr
 450                               455           460
Met Met Glu Asn Thr Gly Glu Arg Ile Asn Leu Glu Phe Asp Met Pro
 465                               470           475           480
Ser Arg Gly Ile Ile Gly Leu Arg Thr Asn Val Leu Thr Ala Ser Ala
 485                               490           495
Gly Glu Ala Ile Met Ala His Arg Phe Lys Glu Tyr Gln Pro Phe Lys
 500                               505           510
Gly Asp Ile Glu Arg Arg Thr Asn Gly Ser Ile Ile Ala Met Glu Ser
 515                               520           525
Gly Thr Ala Phe Ala Tyr Ala Ile Asp Lys Leu Gln Asp Arg Gly Lys
 530                               535           540
Phe Phe Ile Phe Pro Gln Glu Glu Val Tyr Ala Gly Gln Val Val Gly
 545                               550           555           560
Glu His Ala His Glu Lys Asp Leu Val Val Asn Val Thr Lys Ser Lys
 565                               570           575
Lys Leu Thr Asn Met Arg Ala Ser Gly Ser Asp Glu Lys Ala Arg Leu
 580                               585           590
Ile Pro Pro Val Gln Phe Ser Leu Glu Glu Ala Leu Glu Tyr Ile Lys
 595                               600           605
Glu Asp Glu Tyr Val Glu Val Thr Pro Lys Ala Met Arg Met Arg Lys
 610                               615           620
Val Ile Leu Asp Glu Thr Glu Arg Lys Arg Ala Asn Lys Ser
 625                               630           635

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<210> 7964  
 <211> 435  
 <212> PRT  
 <213> B.fragilis

<400> 7964  
 Asp Lys Arg Glu Met Met Met Lys Lys Ile Asn Arg Trp Leu Ile Phe  
 1 5 10 15  
 Leu Leu Cys Val Pro Thr Val Ala Phe Ala Gln Gln Asn Ser Leu Leu  
 20 25 30  
 Gln Lys Tyr Arg Ser Met Ala Leu Asp Tyr Asn His Asp Leu Lys Ala  
 35 40 45

Ala Asp Lys Asn Ile Ala Ala Ser Ile Glu Leu Glu Lys Ala Ala Gln  
 50 55 60  
 Lys Asp Leu Arg Pro Lys Leu Ser Gly Glu Ala Asn Phe Gln Tyr Thr  
 65 70 75 80  
 Gly Asn Pro Leu Gln Leu Asn Ile Asp Leu Pro Ser Met Gln Thr Pro  
 85 90 95  
 Leu Ala Phe Glu Gly Arg Asn Met Lys Tyr Gly Ala Ser Leu Ser Leu  
 100 105 110  
 Leu Gln Pro Val Tyr Thr Gly Gly Arg Leu Leu Glu Ser Ile Arg Met  
 115 120 125  
 Ala Lys His Gln Gln Ser Leu Ala Ile His Gln Ala Asp Tyr Phe Arg  
 130 135 140  
 Ser Ala Val Ser Tyr Gln Thr Asp Met Gln Tyr Trp Asn Thr Val Ala  
 145 150 155 160  
 Arg Ala Glu Ile Val Arg Val Thr Thr Glu Tyr Arg Asn Ser Val Ala  
 165 170 175  
 Thr Phe Ser Gln Ser Ile Arg Glu Arg Val Glu Ala Gly Leu Val Asp  
 180 185 190  
 Pro Gln Asp Leu Leu Met Ala Glu Val Lys Leu Asn Glu Ala Glu Tyr  
 195 200 205  
 Gln Leu Leu Gln Ala Lys Arg Asn Leu Glu Thr Gly Arg Met Ala Leu  
 210 215 220  
 Asn Ser Leu Ile Gly Val Glu Leu His Ala Pro Thr Glu Ile Glu Asp  
 225 230 235 240  
 Thr Ile Ser Ala Val Arg Ala Asp Lys Asp Leu Trp Gly Glu Gly Glu  
 245 250 255  
 Ile Asp Arg Pro Glu Leu Lys Met Ala Tyr Ala Arg Ile Lys Ile Ala  
 260 265 270  
 Glu Ser Ser Lys Lys Leu Thr Asp Ala Lys Tyr Lys Pro Gln Phe Tyr  
 275 280 285  
 Ile Gly Val Asp Gly Ser Tyr Ser Ala Pro Gly Tyr Asp Phe Arg Ser  
 290 295 300  
 Asp Leu Asp Pro Asn Tyr Ala Ile Tyr Ala Lys Val Ser Val Pro Leu  
 305 310 315 320  
 Phe Glu Trp Gly Lys Arg Arg Asp Glu Lys Arg Ala Ser Ser Phe Lys  
 325 330 335  
 Val Gly Met Ala Thr Asp Tyr Leu Asn Gln Val Thr Asp Gln Val Lys  
 340 345 350  
 Leu Glu Val Glu Thr Ala Arg Val Ser Leu Ser Gln Thr Met Glu Gln  
 355 360 365  
 Val Arg Leu Thr Glu Gly Ser Leu Ser Lys Ala Phe Glu Asn Glu Arg  
 370 375 380  
 Met Ala Leu Glu Arg Tyr Thr Glu Gly Lys Ala Ser Val Ile Glu Val  
 385 390 395 400  
 Ile Glu Ala Gln Thr Tyr Arg Gln Ala Ser Gln Leu Asn His Val Gln  
 405 410 415  
 Ala Lys Val Ser Ala Gln Gly Ala Tyr Ser Glu Leu Ile Arg Ala Leu  
 420 425 430  
 Asn Lys Tyr  
 435

&lt;210&gt; 7965

&lt;211&gt; 358

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7965

Asp Cys Met Glu Glu Asn Glu Asp Met Cys Pro Leu Ser Gly Asn Glu  
 1 5 10 15

Ile Ser Asn Ser Met Glu Ala Lys Gln Asp Thr Asp Ser Leu Phe Asp  
 20 25 30  
 Arg Thr Ser Glu Cys Asp Leu Ser Ile Glu Glu Tyr Leu His Phe Leu  
 35 40 45  
 Arg Asn Ala Leu His Ile Val Asp Leu Ser Met Arg Met Lys Val Ser  
 50 55 60  
 Gln Gln Asp Ile Asp Glu Phe Phe Ile Glu Phe Tyr Leu Lys His Glu  
 65 70 75 80  
 Asn Ser Tyr Lys Arg Ser Glu Gly Phe Ala Ala Lys Leu Ile Phe Gly  
 85 90 95  
 Ser Ile Leu Pro Ile Phe Ala Asn Ser Ile Phe Ile Asp Ile Asn Lys  
 100 105 110  
 Ala Lys Glu Trp Glu Arg Asn Cys Glu Ile Asp Ile Glu Lys Tyr Gly  
 115 120 125  
 Met Ala Ser Gly Asn Gly Tyr Ala Gln Glu Tyr Tyr Asp Lys Asn Lys  
 130 135 140  
 Ile Ile Glu Tyr Lys Tyr Lys Ser Leu Leu Lys Ile Phe Ser Asp Pro  
 145 150 155 160  
 Glu Ile Tyr Ala Glu Leu Arg Lys Gln Thr Leu Glu Pro Ile Glu Leu  
 165 170 175  
 Leu Leu Lys Lys Asn Lys Asn Met Asn Phe Glu Lys Asp Lys Val Ser  
 180 185 190  
 Ser Lys Lys Asp Thr Thr Leu Cys Ser Ile Leu Leu Glu Asn Ser Val  
 195 200 205  
 Asp Val Ile Gly Lys Ile Asn Lys Arg His Ser Lys Leu Ser Ala Glu  
 210 215 220  
 Leu Ile Gly Ile Leu Thr Leu Cys Glu Asn Glu Val Lys Leu Phe Ser  
 225 230 235 240  
 Ser Leu Gly Lys Lys Pro Gln Val Asp Asn Tyr Asn Ser Leu Thr Ala  
 245 250 255  
 Arg Glu Arg Val Ile Leu Thr Ala Cys Arg Leu Tyr Asn Glu Gly Phe  
 260 265 270  
 Arg Gly Leu Pro Glu Ser Arg Ile Ala Arg Val Ile Ala Met Glu Tyr  
 275 280 285  
 Gly Gly Ala Glu Glu Thr Phe Arg Lys Ile Leu Lys Gln Leu Asn Asn  
 290 295 300  
 Asp Asn Phe Asn Cys Ala Lys Leu Lys Thr Leu Lys Asp Leu Thr Glu  
 305 310 315 320  
 Val Leu Lys Lys Glu Ala Asn Glu Ser Asn Val Arg Ile Ala Asn Glu  
 325 330 335  
 Lys Tyr Lys Lys Ile Thr Glu Phe Arg Ile Gly Ser Leu Arg Glu Leu  
 340 345 350  
 Met Arg Lys Thr Lys Glu  
 355

&lt;210&gt; 7966

&lt;211&gt; 392

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7966

Lys Pro Val Asp Leu Gln Val Ala Ala Ile Gly Thr Val Glu Lys Gln  
 1 5 10 15  
 Val Leu Ile Lys Gln Leu Lys Ser Arg Arg Gln Gln Lys Thr Met  
 20 25 30  
 Lys Asn Asn Ser Gly Arg Leu Ser Leu Arg Lys Arg Leu Gly Leu Glu  
 35 40 45  
 Ile Ala Leu Lys Ile Arg Asn Asn Leu Arg Glu Leu His Pro Leu Arg  
 50 55 60

Gln Leu Phe Trp Glu Cys Thr Leu Gln Cys Asn Leu Ala Cys Lys His  
 65 70 75 80  
 Cys Gly Ser Asp Cys Arg Lys Met Ser Glu Gln Lys Asp Met Pro Ala  
 85 90 95  
 Thr Asp Phe Leu Gln Val Val Asp Ser Ile Thr Pro His Val Asn Pro  
 100 105 110  
 Asn Glu Val Asn Ile Ile Ile Thr Gly Gly Glu Pro Leu Met Arg Asp  
 115 120 125  
 Asp Leu Glu Glu Val Gly Met Ala Leu Tyr Arg Lys Gly Tyr Pro Trp  
 130 135 140  
 Gly Ile Val Ser Asn Gly Leu Tyr Leu Thr Arg Glu Arg Leu Asp Ser  
 145 150 155 160  
 Leu Met Ala Ala Gly Leu His Ala Val Thr Ile Ser Leu Asp Gly Phe  
 165 170 175  
 Ala Glu Glu His Asn Trp Leu Arg Gly Asn Pro Asp Ser Tyr Glu Lys  
 180 185 190  
 Ala Leu Glu Ala Ile Lys Met Leu Val His Glu Pro Glu Leu Thr Trp  
 195 200 205  
 Asp Val Val Thr Cys Val Asn Arg Lys Asn Tyr Ser Tyr Leu Glu Glu  
 210 215 220  
 Leu Lys Ala Tyr Leu Tyr Thr Ile Gly Val Arg Asn Trp Arg Ile Phe  
 225 230 235 240  
 Thr Ile Phe Pro Val Gly Arg Ala Ala Asn His Pro Glu Phe Gln Leu  
 245 250 255  
 Thr Asp Glu Glu Phe Thr Gly Val Leu Glu Phe Ile Lys Lys Val Arg  
 260 265 270  
 Lys Glu Gly Arg Val His Leu Ser Tyr Gly Cys Glu Gly Phe Leu Gly  
 275 280 285  
 Lys Tyr Glu Ser Glu Val Arg Asp His Phe Tyr Ser Cys Asn Ala Gly  
 290 295 300  
 Ile Ser Val Ala Ser Val Leu Ala Asp Gly Ser Ile Ser Ser Cys Pro  
 305 310 315 320  
 Ser Ile Arg Ser Asn Phe His Gln Gly Asn Ile Tyr Glu Asp Asp Phe  
 325 330 335  
 Met Glu Val Trp Glu Lys Arg Phe Gln Val Phe Arg Asn Arg Glu Trp  
 340 345 350  
 Ala Arg Lys Gly Glu Cys Ala Asp Cys Ser Phe Phe Arg Tyr Cys Glu  
 355 360 365  
 Gly Asn Gly Met His Leu His Asn Asp Asn Gly Asp Leu Leu Phe Cys  
 370 375 380  
 His Gln Lys Arg Ile Val Glu Leu  
 385 390

&lt;210&gt; 7967

&lt;211&gt; 496

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7967

Thr Leu Ser Glu Cys Pro Ser Pro Thr Ser Lys Glu Gln Gln Trp Ala  
 1 5 10 15  
 Val Ala Arg Pro Gln Phe Ser Gly Ser Gly Thr Ser Met Gln Val Phe  
 20 25 30  
 Thr Gly Lys Ser Gly Glu Ala His Thr Ala Gly Pro Leu Leu Asn Leu  
 35 40 45  
 His Arg Pro Ala Tyr Pro Glu Ser Trp Phe Asn Gly Gly Lys Gly Gly  
 50 55 60  
 Phe Ala Ile Arg Lys Glu Ala Asp Gly Val Ile Ala Val Ala Tyr Ser  
 65 70 75 80

Gly	Glu	Arg	Met	Leu	Glu	Ala	Gly	Ser	Ser	Ile	Thr	Phe	His	Phe	Ala
				85					90					95	
Met	Ile	Ile	Thr	Pro	Val	Lys	Met	Leu	Asp	Met	Lys	Ser	Gln	Phe	Thr
			100					105					110		
Asp	Arg	Tyr	Tyr	His	Asn	Gly	Pro	Lys	Pro	Thr	Pro	Ser	Gln	Ala	Asp
		115					120					125			
Ile	Glu	Ala	Gly	Val	Arg	Ile	Ile	Asn	Val	His	Gln	Gly	Asn	Asp	Tyr
	130					135					140				
Asn	Pro	Phe	Ile	Asn	Tyr	Pro	Phe	Leu	Thr	Val	Asp	Lys	Met	Lys	Glu
145					150				155						160
Phe	Thr	Lys	Glu	Trp	His	Ala	Arg	Gly	Cys	Lys	Ile	Lys	Ile	Tyr	Tyr
			165					170						175	
Thr	Leu	Arg	Glu	Leu	Ser	Asn	Ala	Thr	Ala	Glu	Ile	Trp	Ala	Ile	Arg
			180					185					190		
Ser	Leu	Gly	Asn	Glu	Ile	Leu	Arg	Gly	Gly	Asn	Gly	Glu	Gly	Phe	Pro
		195					200					205			
Trp	Cys	Arg	Glu	His	Phe	Val	Thr	Asn	Tyr	Thr	Pro	Gln	Trp	Tyr	Glu
	210					215					220				
His	Phe	Asp	Asn	Ala	Asp	Lys	Gln	Gly	Ile	Thr	Ala	Asp	Ala	Ser	Ile
225					230					235					240
Leu	Thr	Ala	Glu	Gly	Asp	Ser	Arg	Trp	Tyr	Asn	Tyr	Tyr	Ile	Glu	Gly
			245					250						255	
Leu	Arg	Trp	Met	Val	Gln	Asn	Met	Asp	Ile	Asp	Gly	Ile	Tyr	Leu	Asp
		260						265					270		
Asp	Val	Ser	Phe	Asp	Arg	Arg	Ile	Leu	Lys	Arg	Met	Arg	Arg	Ala	Met
		275					280					285			
Glu	Ser	Val	Lys	Pro	Gly	Cys	Leu	Ile	Asp	Leu	His	Ser	Asn	Thr	Gly
		290				295					300				
Phe	Ser	Arg	Gly	Pro	Ala	Asn	Gln	Tyr	Thr	Glu	Phe	Phe	Pro	Tyr	Val
305					310					315					320
Asp	Lys	Leu	Trp	Phe	Gly	Glu	Ser	Phe	Leu	Tyr	Asp	Lys	Met	Thr	Pro
				325					330					335	
Ala	Asn	Trp	Leu	Val	Glu	Ser	Ser	Gly	Ile	Pro	Phe	Gly	Leu	Ser	Gly
			340					345					350		
Asp	Met	Leu	Tyr	Arg	Gly	Gly	Asn	Ala	Trp	Leu	Gly	Met	Gln	Tyr	Gly
		355					360					365			
Met	Thr	Val	Arg	Tyr	Pro	Trp	Tyr	Thr	Glu	Gly	Val	Asn	Cys	Asp	Pro
	370					375					380				
Arg	Gln	Val	Trp	Lys	Ile	Trp	Asp	Ser	Phe	Gly	Ile	Ala	Glu	Ala	Thr
385					390					395					400
Met	Leu	Gly	Phe	Trp	Glu	Glu	His	Pro	Ala	Val	Ser	Thr	Ser	Asp	Glu
			405					410						415	
Ala	Val	Lys	Val	Thr	Val	Tyr	Arg	Lys	Pro	Glu	Lys	Val	Leu	Leu	Ser
			420					425					430		
Leu	Gly	Asn	Tyr	Ser	Asp	Glu	Val	Lys	Thr	Val	Lys	Leu	Asn	Ile	Asp
		435					440					445			
Trp	Lys	Gln	Ile	Gly	Leu	Asn	Pro	Gln	Lys	Ala	Lys	Leu	Thr	Thr	Pro
	450					455					460				
Glu	Ile	Pro	Asp	Met	Gln	Gln	Ala	His	Glu	Trp	Asn	Val	Asp	Thr	Pro
465					470					475					480
Ile	Val	Thr	Ala	Pro	Arg	Lys	Gly	Trp	Ile	Ile	Tyr	Leu	Thr	Ser	Glu
				485					490					495	

&lt;210&gt; 7968

&lt;211&gt; 60

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7968

Ala His Gly Phe Arg Asp Tyr Phe Thr Leu Leu Phe Glu Val Leu Phe  
 1 5 10 15  
 Thr Phe Pro Ser Gln Tyr Trp Phe Ala Ile Gly Leu Ser Gly Val Phe  
 20 25 30  
 Ser Leu Thr Gly Trp Ser Arg Leu Ile His Ala Glu Phe Leu Val Leu  
 35 40 45  
 Arg Ala Thr Gln Asp Thr Thr Leu Arg Leu Pro  
 50 55 60

<210> 7969

<211> 243

<212> PRT

<213> B.fragilis

<400> 7969

Ile Gln His Trp Leu Asp Ser Lys Lys Leu Ser Thr Thr Ala Asn Leu  
 1 5 10 15  
 Pro Ser Arg Leu Phe Ala Cys Phe Arg Gln Val Thr Tyr Ile Cys Ser  
 20 25 30  
 Arg Ile Val Thr Met Cys Lys Met Lys Gly Lys Ser Ile Thr Gly Glu  
 35 40 45  
 Arg Asp Arg Glu Ala Thr Glu Lys Arg Leu Leu Asp Thr Ile Gly Lys  
 50 55 60  
 Met Ile Ala Glu Asp Gly Phe Glu Lys Ile Gly Ile Asn Ala Ile Ala  
 65 70 75 80  
 Thr Gln Ser Gly Val Ser Lys Ile Leu Ile Tyr Arg Tyr Phe Gly Ser  
 85 90 95  
 Val Glu Gly Leu Met Ala Ala Tyr Ile Arg Gln His Asp Phe Trp Ile  
 100 105 110  
 Asn Phe Pro Leu Glu Tyr Pro Ser Arg Glu Lys Leu Pro Ala Phe Val  
 115 120 125  
 Lys Arg Met Phe Gln Gly Gln Ile Glu Gln Leu Arg Asn Asn Pro Thr  
 130 135 140  
 Leu Lys Arg Leu Tyr Arg Trp Glu Leu Ser Cys Asn Asn Asp Met Ile  
 145 150 155 160  
 Val Lys Leu Arg Glu Gln Arg Glu Lys Val Gly Ile Asp Leu Val Lys  
 165 170 175  
 Lys Val Ser Glu Leu Thr Gly His Pro Gln Lys Glu Ile Ala Ala Ile  
 180 185 190  
 Ala Ser Met Leu Thr Ala Ser Ile Thr Tyr Leu Val Met Leu Glu Asp  
 195 200 205  
 Phe Cys Pro Val Tyr Asn Gly Ile Pro Leu Asn Glu Asn Ser Gly Trp  
 210 215 220  
 Glu Gln Ile Asn Glu Gly Ile Glu Ile Leu Ile Asn Lys Val Phe Gln  
 225 230 235 240  
 Asp Glu Asn

<210> 7970

<211> 106

<212> PRT

<213> B.fragilis

<400> 7970

Leu Lys His Cys Cys Met Asn Lys Lys Glu Leu Ile Ser Thr Ile Ala  
 1 5 10 15  
 Glu Lys Ala Gly Leu Asn Lys Ser Glu Ser Arg Lys Leu Leu Asn Val  
 20 25 30  
 Ile Ile Gly Ile Val Ile Glu Glu Met Lys Lys Asp Gly Lys Leu Leu



Val Ser Thr Leu Gly Thr Gly Ile Arg Phe Val Asp Pro Leu Gln Ile  
 165 170 175  
 Tyr Ile Pro Lys Arg Ser Gly Lys Val Asn Met Ala Asn Pro Ala Ala  
 180 185 190  
 Ser Phe Asn Met Asp Tyr Leu Tyr Ser Pro Gly Val Val Phe Val Val  
 195 200 205  
 Asn Gln Gln Lys Tyr Asp Gly Gln Tyr Ile Leu Thr Ser Leu Asp Phe  
 210 215 220  
 Ala Arg Arg Leu Leu Asp Tyr Thr Thr Glu Val Ser Ala Ile Glu Leu  
 225 230 235 240  
 Lys Leu Lys Pro Gly Ser Asp Leu Ser Phe Val Lys Ala Lys Ile Lys  
 245 250 255  
 Lys Glu Leu Gly Asp Asp Phe Val Ile Arg Asn Arg Tyr Glu Gln Gln  
 260 265 270  
 Glu Asp Val Phe Arg Ile Met Glu Ile Glu Lys Leu Val Ser Tyr Leu  
 275 280 285  
 Phe Leu Thr Phe Ile Leu Val Ile Ala Cys Phe Asn Val Ile Gly Ser  
 290 295 300  
 Leu Ser Met Leu Ile Leu Asp Lys Lys Glu Asp Val Asp Thr Leu Arg  
 305 310 315 320  
 Lys Leu Gly Ala Asn Asp Arg Leu Val Ser Arg Ile Phe Leu Phe Glu  
 325 330 335  
 Gly Cys Met Ile Ser Phe Tyr Gly Ala Ile Ile Gly Ile Val Leu Gly  
 340 345 350  
 Leu Leu Leu Cys Trp Val Gln Met Thr Tyr Gly Ile Ile Ser Leu Gly  
 355 360 365  
 Gly Gly Ser Ala Ala Gly Asn Phe Val Val Asp Ala Tyr Pro Val Ser  
 370 375 380  
 Val His Leu Trp Asp Val Ile Val Ile Phe Ile Thr Val Phe Ala Val  
 385 390 395 400  
 Gly Phe Leu Ser Val Trp Tyr Pro Val Arg Tyr Leu Ser Lys Arg Leu  
 405 410 415  
 Leu Lys Met

<210> 7973  
 <211> 64  
 <212> PRT  
 <213> B.fragilis

<400> 7973  
 Ile Ser Pro Cys Gln Tyr Val Ile Arg Pro His Cys Val Leu Thr Tyr  
 1 5 10 15  
 Asp Ile Trp Leu Tyr Ser Gln Gly Arg Lys Val Met Lys Gly Arg Leu  
 20 25 30  
 Arg Asp Asp Gly Met Leu Asp Asp Ile Phe Val Tyr Ser Arg Ile Leu  
 35 40 45  
 Val Lys Phe Val Arg Pro Ser Phe Thr Phe Leu Leu Arg Gly Gly Glu  
 50 55 60

<210> 7974  
 <211> 104  
 <212> PRT  
 <213> B.fragilis

<400> 7974  
 Pro Met Glu Trp Leu Asn Glu Tyr His Leu Ser Gly Leu Leu Ile Gly  
 1 5 10 15  
 Ile Cys Thr Phe Leu Ile Ile Gly Leu Phe His Pro Val Val Val Lys



20	25	30
Ala Glu Tyr Tyr Trp Gly Thr Lys Cys Trp Trp Ile Phe Leu Ile Leu		
35	40	45
Gly Ile Ala Gly Val Ala Ala Ser Leu Ser Thr Asp Asn Ile Leu Val		
50	55	60
Ser Ser Leu Leu Gly Val Phe Ala Phe Ser Ser Phe Trp Thr Ile Lys		
65	70	75
Glu Val Phe Glu Gln Glu Glu Arg Val Lys Lys Gly Trp Phe Pro Lys		
85	90	95
Asn Pro Lys Arg Thr Tyr Lys Phe		
100		

&lt;210&gt; 7975

&lt;211&gt; 486

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7975

Ile Met Leu Leu Lys Gln Thr Lys Ile Val Ala Ser Ile Ser Asp Arg		
1	5	10
Arg Cys Asp Val Asp Phe Ile Lys Glu Leu Phe Asp Ala Gly Met Asn		
20	25	30
Val Val Arg Met Asn Thr Ala His Ala Ser Arg Glu Gly Phe Glu Ala		
35	40	45
Leu Ile Ala Asn Val Arg Ala Val Ser Asn Arg Ile Ala Ile Leu Met		
50	55	60
Asp Thr Lys Gly Pro Glu Val Arg Thr Thr Ala Asn Ala Asp Pro Ile		
65	70	75
Leu Tyr Gln Ile Gly Glu Lys Val Lys Ile Val Gly Asp Pro Asp Arg		
85	90	95
Glu Thr Thr Arg Glu Cys Ile Ala Val Ser Tyr Pro Asn Phe Val His		
100	105	110
Asp Leu Asn Val Gly Gly Thr Ile Leu Ile Asp Asp Gly Asp Leu Glu		
115	120	125
Leu Arg Val Ile Asp Lys Thr Thr Glu Tyr Leu Leu Cys Glu Val Gln		
130	135	140
Asn Glu Ala Thr Leu Gly Ser Arg Lys Ser Val Asn Val Pro Gly Val		
145	150	155
Arg Ile Asn Leu Pro Ser Leu Thr Glu Lys Asp Arg Asn Asn Ile Leu		
165	170	175
Tyr Ala Ile Glu Lys Asp Ile Asp Phe Ile Ala His Ser Phe Val Arg		
180	185	190
Asn Arg Gln Asp Val Leu Asp Ile Arg Gly Ile Leu Asp Ala His Asn		
195	200	205
Ser Asp Ile Arg Ile Ile Ala Lys Ile Glu Asn Gln Glu Gly Val Asp		
210	215	220
Asn Ile Asp Glu Ile Leu Glu Val Ala Asp Gly Val Met Val Ala Arg		
225	230	235
Gly Asp Leu Gly Ile Glu Val Pro Gln Glu Arg Ile Pro Gly Ile Gln		
245	250	255
Arg Met Leu Ile Arg Lys Cys Ile Leu Ala Lys Lys Pro Val Ile Val		
260	265	270
Ala Thr Gln Met Leu His Thr Met Ile Asn Asn Pro Arg Pro Thr Arg		
275	280	285
Ala Glu Val Thr Asp Ile Ala Asn Ala Ile Tyr Tyr Arg Thr Asp Ala		
290	295	300
Leu Met Leu Ser Gly Glu Thr Ala Tyr Gly Lys Tyr Pro Val Glu Ala		
305	310	315
Val Lys Thr Met Thr Lys Ile Ala Ala Gln Ala Glu Lys Asp Lys Leu		

115 120 125 130 135 140 145 150 155 160 165 170 175 180 185 190 195 200 205 210 215 220 225 230 235 240 245 250 255 260 265 270 275 280 285 290 295 300 305 310 315 320 325 330 335 340 345 350 355 360 365 370 375 380 385 390 395 400 405 410 415 420 425 430 435 440 445 450 455 460 465 470 475 480 485 490 495 500 505 510 515 520 525 530 535 540 545 550 555 560 565 570 575 580 585 590 595 600 605 610 615 620 625 630 635 640 645 650 655 660 665 670 675 680 685 690 695 700 705 710 715 720 725 730 735 740 745 750 755 760 765 770 775 780 785 790 795 800 805 810 815 820 825 830 835 840 845 850 855 860 865 870 875 880 885 890 895 900 905 910 915 920 925 930 935 940 945 950 955 960 965 970 975 980 985 990 995 1000

335

[illegible]

2.

[illegible]

<213> B.fragilis

[illegible]

<213> B.fragilis

&lt;400&gt; 7978

Ala Phe Thr Arg Lys Glu Val Ser Ile Phe Leu Lys Cys Pro Tyr Val  
 1 5 10 15  
 Pro Glu Ile Ser Pro Ile Val Val Arg Asn Ile Ser Tyr Cys Tyr Pro  
 20 25 30  
 Lys Arg Val Leu Ala Glu Glu Phe Phe Leu Pro Leu Thr Ile Ala Asp  
 35 40 45  
 Lys Ala Leu Tyr Thr Asp Arg Lys Ala Gly Arg Arg Pro Glu Lys Glu  
 50 55 60  
 Pro Phe Thr Gly Arg Thr Val Ile Pro Pro Ser Lys  
 65 70 75

&lt;210&gt; 7979

&lt;211&gt; 514

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7979

Lys His Val Leu Ile Lys Val Phe Gly Ala Ala Val Gln Gly Ile Glu  
 1 5 10 15  
 Ala Thr Leu Ile Thr Ile Glu Val Asn Ser Ser Arg Gly Cys Met Phe  
 20 25 30  
 Tyr Met Val Gly Leu Pro Asp Ser Ala Val Lys Glu Ser His Gln Arg  
 35 40 45  
 Ile Leu Ser Ala Leu Gln Val Thr Gly Tyr Lys Met Pro Thr Ser Asn  
 50 55 60  
 Ile Val Ile Asn Met Ala Pro Ala Asp Ile Arg Lys Glu Gly Ser Ser  
 65 70 75 80  
 Tyr Asp Leu Pro Leu Ala Ile Gly Met Leu Ala Ala Gly Glu Thr Ile  
 85 90 95  
 Ser Cys Gln Lys Leu Ser Arg Tyr Met Met Met Gly Glu Leu Ser Leu  
 100 105 110  
 Asp Gly Thr Ile Gln Pro Ile Lys Gly Ala Leu Pro Ile Ala Ile Lys  
 115 120 125  
 Ala Arg Glu Glu Gly Phe Asp Gly Leu Ile Val Pro Ser Gln Asn Ala  
 130 135 140  
 Arg Glu Ala Ala Val Val Asn Asn Leu Ser Val Tyr Gly Val Asn Asn  
 145 150 155 160  
 Ile Gln Glu Val Ile Glu Phe Ile Asn Gly Lys Arg Glu Leu Thr Pro  
 165 170 175  
 Thr Ile Val Asn Thr Arg Glu Glu Phe Tyr Ala Cys Gln Ser Asp Phe  
 180 185 190  
 Glu Tyr Asp Phe Ala Asp Val Lys Gly Gln Glu Asn Val Lys Arg Ala  
 195 200 205  
 Leu Glu Val Ala Ala Ala Gly Gly His Asn Leu Ile Met Val Gly Ala  
 210 215 220  
 Pro Gly Ser Gly Lys Ser Met Met Ala Lys Arg Leu Pro Ser Ile Leu  
 225 230 235 240  
 Pro Pro Leu Ser Leu Gly Glu Ser Leu Glu Thr Thr Lys Ile His Ser  
 245 250 255  
 Val Ala Gly Lys Leu Gly Arg Asn Ser Ser Leu Ile Ser Gln Arg Pro  
 260 265 270  
 Phe Arg Ala Pro His His Thr Ile Ser Gln Val Ala Met Val Gly Gly  
 275 280 285  
 Gly Ser Phe Pro Gln Pro Gly Glu Ile Ser Leu Ala His Asn Gly Val  
 290 295 300  
 Leu Phe Leu Asp Glu Leu Pro Glu Phe Asn Arg Ser Val Leu Glu Val  
 305 310 315 320

Leu Arg Gln Pro Leu Glu Asp Arg Arg Ile Thr Ile Ser Arg Val Lys  
 325 330 335  
 Ser Thr Ile Asp Tyr Pro Ala Ser Phe Met Leu Val Ala Ser Met Asn  
 340 345 350  
 Pro Cys Pro Cys Gly Tyr Tyr Asn His Pro Thr Lys Pro Cys Val Cys  
 355 360 365  
 Asn Pro Gly Gln Val Gln Lys Tyr Leu Asn Lys Ile Ser Gly Pro Leu  
 370 375 380  
 Leu Asp Arg Ile Asp Ile Gln Ile Glu Ile Val Pro Val Pro Phe Glu  
 385 390 395 400  
 Lys Ile Ser Asp Arg Gln Gln Gly Glu Ser Ser Ala Ala Ile Arg Gln  
 405 410 415  
 Arg Val Ile Lys Ala Arg Gln Lys Gln Glu Glu Arg Phe Ser Gly Tyr  
 420 425 430  
 Pro Gly Thr Tyr Cys Asn Ala Gln Met Thr Ser Lys Gln Leu Ser Ser  
 435 440 445  
 Phe Ala Gln Pro Asp Thr Lys Gly Leu Leu Leu Leu Lys Asn Ala Met  
 450 455 460  
 Glu Arg Leu Asn Leu Ser Ala Arg Ala Tyr Asp Arg Ile Leu Lys Val  
 465 470 475 480  
 Ser Arg Thr Ile Ala Asp Leu Glu Glu Ser Glu Gln Ile Gln Pro Ser  
 485 490 495  
 His Leu Ala Glu Ala Ile Ser Tyr Arg Asn Leu Asp Arg Glu Asn Trp  
 500 505 510  
 Ala Gly

<210> 7980  
 <211> 404  
 <212> PRT  
 <213> B.fragilis

<400> 7980  
 Gly Asp Ile Arg Met Lys Lys Val Val Phe Leu Gly Leu Gly Tyr Ile  
 1 5 10 15  
 Gly Leu Pro Thr Ala Ala Val Ala Ala Gly His Gly Tyr Glu Val Val  
 20 25 30  
 Gly Val Asp Val Asn Pro Ser Val Val Glu Thr Ile Asn Gln Gly Lys  
 35 40 45  
 Ile His Ile Val Glu Pro Glu Leu Asp Gln Ile Val Lys Glu Val Val  
 50 55 60  
 Arg Thr Gly Asn Leu Arg Ala Val Ser Lys Pro Glu Gln Ala Asp Ala  
 65 70 75 80  
 Phe Phe Val Val Val Pro Thr Pro Phe Lys Gln Asn His Arg Ala Asp  
 85 90 95  
 Ile Thr Tyr Val Glu Ser Ala Thr Arg Ser Val Ile Pro Tyr Leu Arg  
 100 105 110  
 Glu Gly Asn Leu Phe Val Ile Glu Ser Thr Ser Pro Val Phe Thr Thr  
 115 120 125  
 Glu Arg Met Ala Glu Val Ile Tyr Lys Glu Arg Pro Glu Leu Lys Asp  
 130 135 140  
 Lys Ile Tyr Ile Ala Tyr Cys Pro Glu Arg Val Leu Pro Gly Asn Thr  
 145 150 155 160  
 Leu Tyr Glu Leu Val His Asn Asp Arg Val Ile Gly Gly Val Asn Pro  
 165 170 175  
 Glu Ser Thr Ala Lys Ala Ile Glu Phe Tyr Ser Ala Phe Val Gln Gly  
 180 185 190  
 Lys Leu His Pro Thr Asn Ala Arg Thr Ala Glu Met Cys Lys Leu Thr  
 195 200 205

Glu Asn Ser Ser Arg Asp Ser Gln Ile Ala Phe Ala Asn Glu Leu Ser  
 210 215 220  
 Met Ile Cys Asp Lys Ala Gly Ile Asn Val Trp Glu Leu Ile Glu Leu  
 225 230 235 240  
 Ala Asn Lys His Pro Arg Val Asn Ile Leu Gln Pro Gly Cys Gly Val  
 245 250 255  
 Gly Gly His Cys Ile Ala Val Asp Pro Trp Phe Ile Val Ser Asp Tyr  
 260 265 270  
 Pro Glu Gln Ala Gln Ile Ile Lys Arg Ala Arg Glu Thr Asn Asp Tyr  
 275 280 285  
 Lys Ala Asp Trp Cys Ala Asn Lys Val Met Glu Ala Cys Gln Gln Phe  
 290 295 300  
 Val Glu Lys Asn Asp Arg Glu Pro Val Val Ala Cys Met Gly Leu Ala  
 305 310 315 320  
 Phe Lys Pro Asn Ile Asp Asp Leu Arg Glu Ser Pro Ala Lys Tyr Ile  
 325 330 335  
 Ala Ser Arg Ile Val Ser Glu Ser Arg Ala Glu Val Leu Ile Val Glu  
 340 345 350  
 Pro Asn Val Ala Ser His Ala Ser Phe His Leu Thr Asp Tyr Arg Glu  
 355 360 365  
 Ala Tyr Gln Lys Ala Asp Ile Val Val Trp Leu Val Arg His Thr Pro  
 370 375 380  
 Phe Val Glu Leu Pro Arg Glu Glu Ser Lys Leu Glu Leu Asp Phe Cys  
 385 390 395 400  
 Gly Val Arg Lys

<210> 7981

<211> 379

<212> PRT

<213> B.fragilis

<400> 7981

Ser Leu Thr Leu Met Lys Lys Pro Ser Ser Thr Leu Ala Pro Ala Leu  
 1 5 10 15  
 Ala Ser Leu Asp Ile Leu Arg Gly Phe Asp Leu Phe Leu Val Phe  
 20 25 30  
 Phe Gln Pro Val Leu Trp Thr Leu Ala His Gln Leu Asn Leu Pro Trp  
 35 40 45  
 Leu Asn Ser Ile Leu Phe Gln Phe Asp His Glu Val Trp Glu Gly Phe  
 50 55 60  
 Arg Phe Trp Asp Leu Val Met Pro Leu Phe Leu Phe Met Thr Gly Ala  
 65 70 75 80  
 Ser Met Pro Phe Ser Phe Ser Lys Phe Lys Asp Asn Pro Asp Lys Gly  
 85 90 95  
 Pro Val Tyr Arg Lys Ile Ile Lys Arg Phe Ile Leu Leu Phe Ile Phe  
 100 105 110  
 Gly Met Ile Val Gln Gly Asn Leu Leu Gly Leu Asp Pro Lys His Leu  
 115 120 125  
 Tyr Leu Tyr Ser Asn Thr Leu Gln Ala Ile Ala Thr Gly Tyr Leu Ile  
 130 135 140  
 Ala Ala Ile Ile Gln Leu His Cys Asn Phe Arg Trp Gln Leu Met Val  
 145 150 155 160  
 Thr Ala Leu Leu Leu Leu Ile Tyr Trp Ile Pro Met Thr Phe Leu Gly  
 165 170 175  
 Asp Phe Thr Pro Glu Gly Asn Phe Ala Glu Lys Val Asp Arg Leu Val  
 180 185 190  
 Leu Gly His Phe Arg Asp Gly Val Phe Trp Asn Glu Asp Gly Ser Trp  
 195 200 205

Ser Phe Ser Ala His Tyr Asn Tyr Thr Trp Ile Trp Ser Ser Leu Thr  
 210 215 220  
 Phe Gly Ala Thr Val Met Leu Gly Ala Phe Ala Gly Lys Ile Met Lys  
 225 230 235 240  
 Ala Gly Lys Asp Asn Arg Arg Lys Val Val Gln Thr Leu Leu Ile Ile  
 245 250 255  
 Gly Ile Ser Leu Ile Ala Phe Ser Leu Ile Trp Ser Leu Gln Met Pro  
 260 265 270  
 Ile Ile Lys Arg Leu Trp Thr Ser Ser Met Thr Leu Phe Ser Gly Gly  
 275 280 285  
 Leu Cys Phe Leu Leu Met Gly Ala Phe Tyr Tyr Arg Ile Asp Tyr Lys  
 290 295 300  
 Gly His Ser Arg Gly Leu Asn Trp Leu Lys Ile Tyr Gly Met Asn Ser  
 305 310 315 320  
 Ile Thr Ala Tyr Ile Leu Gly Glu Val Ile Asn Phe Arg Cys Ile Ala  
 325 330 335  
 Ala Ser Val Ser Tyr Gly Leu Glu Gln Tyr Leu Gly Gly Tyr Tyr Gln  
 340 345 350  
 Val Trp Leu Ser Phe Ala Asn Tyr Leu Ile Val Phe Leu Ile Leu Arg  
 355 360 365  
 Ile Met Tyr Arg Gln Lys Ile Phe Leu Lys Ile  
 370 375

&lt;210&gt; 7982

&lt;211&gt; 222

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7982

Ser Phe Asn Ser Ser Thr Thr Met Thr Asp Leu Thr Ile Leu Ile Ala  
 1 5 10 15  
 Val Ile Ala Leu Ala Leu Trp Pro Ile Val Phe Leu Ile Ser Arg Ile  
 20 25 30  
 Leu His Glu Arg Asn Lys Arg Ala Lys Pro Ser Gly Asp Thr Ala Ser  
 35 40 45  
 Ala Glu Thr Glu Glu Val Thr Glu Glu Met Thr Thr Ser Ala Leu Ile  
 50 55 60  
 Met Ser Ile Leu Gln Gln Leu Gly Cys Gln Pro Glu Val Asn Glu Glu  
 65 70 75 80  
 Asn His Ile Ser Phe Lys Tyr Gln Gly Asp Asp Phe Leu Val Ala Ala  
 85 90 95  
 Glu Asp Gly Leu Arg Leu Ile Ile Val Trp Asn Pro Trp Trp Ala Ser  
 100 105 110  
 Ile Ser Ile Asp Asn Gln Ala Leu Pro Tyr Leu Lys Glu Ile Ile Asn  
 115 120 125  
 Ala Val Asn Met Asn Ser Leu Val Thr Thr Val Tyr Ala Leu Asp Glu  
 130 135 140  
 Asp Glu Lys Thr Phe Gly Ile His Ser Lys Cys His Met Leu Phe Ala  
 145 150 155 160  
 Pro Glu Glu Glu Glu Pro Glu Lys Ser Phe Thr Asp Leu Leu Asp Ser  
 165 170 175  
 Phe Phe Thr Thr His Asn Thr Ile Lys Glu Asn Leu Lys Gln Leu Gly  
 180 185 190  
 Asn Gly Met Pro Asp Met Glu Lys Lys Glu Arg Val Arg Ile Lys Gly  
 195 200 205  
 Phe Ala Ala Tyr Lys Asp Asn Ser Thr Glu Leu Lys Gly Glu  
 210 215 220

&lt;210&gt; 7983

<211> 87  
 <212> PRT  
 <213> B.fragilis

<400> 7983

Tyr Lys Asn Arg Pro Lys Val Lys Thr His Leu Gln Lys His Leu Asn  
 1 5 10 15  
 Asn Asp Lys Phe Arg Glu Asn Leu Ile Thr Phe Gly Gln Thr Asn Leu  
 20 25 30  
 Ile Asn Lys Ser Ala Trp Phe Arg Lys Glu Gln Glu Lys Asn Asp Ile  
 35 40 45  
 His Thr Val Thr Ser Asn Asn Tyr Ala Tyr Glu Val Glu Lys Thr Asn  
 50 55 60  
 Pro Leu Gln Thr Leu Phe Arg Lys Gln Asn Lys Ile Arg Asn Pro Lys  
 65 70 75 80  
 Thr Asn Tyr Gln Ile Asn Val  
 85

<210> 7984  
 <211> 88  
 <212> PRT  
 <213> B.fragilis

<400> 7984

Ser Leu Pro Arg Ala His Ile Asp Gly Gly Val Trp His Leu Asp Val  
 1 5 10 15  
 Gly Ser Ser His Pro Gly Ala Gly Glu Gly Pro Lys Gly Trp Ala Val  
 20 25 30  
 Arg Pro Leu Lys Trp His Ala Ser Trp Val Gln Asn Val Val Arg Gln  
 35 40 45  
 Phe Gly Leu Tyr Leu Ser Trp Ala Tyr Glu Ile Cys Val Ala Leu Thr  
 50 55 60  
 Leu Val Arg Glu Asp Arg Val Gly Leu Thr Ser Gly Leu Pro Val Val  
 65 70 75 80  
 Pro Pro Gly Ala Leu Pro Gly Ile  
 85

<210> 7985  
 <211> 229  
 <212> PRT  
 <213> B.fragilis

<400> 7985

Arg Val Thr Arg Ile Arg Cys Asn Asp Ile Cys Asn Asn His Phe Leu  
 1 5 10 15  
 Phe Asn Gly Tyr Tyr Gln Gly Phe Ile Tyr Ser Tyr Phe Tyr Lys Lys  
 20 25 30  
 Val Ile Thr Met Pro Asn Asn Ser Arg Lys Thr Ile Phe Thr Thr Ile  
 35 40 45  
 Ser Ile Asp Lys Glu Thr Ala Thr Leu Val Gly Lys Ile Cys Lys Arg  
 50 55 60  
 Tyr Ser Leu Lys Lys Ser Glu Val Val Lys Leu Ala Phe Gly Tyr Ile  
 65 70 75 80  
 Asp Lys Ala His Ile Asn Pro Ser Glu Ala Pro Glu Ser Val Lys Ser  
 85 90 95  
 Glu Leu Ala Lys Ile Asn Lys Arg Gln Asp Asp Ile Ile Arg Phe Ile  
 100 105 110  
 Arg His Tyr Glu Glu Lys Gln Leu Asn Pro Met Ile Arg Val Thr Asn  
 115 120 125

115 120 125



Ser Ile Ala Leu Arg Phe Asp Ala Ile Gly Lys Thr Leu Glu Thr Leu  
 130 135 140  
 Ile Leu Ser Gln Leu Glu Ala Asn Gln Glu Arg Gln Thr Ala Val Leu  
 145 150 155 160  
 Lys Lys Leu Ser Glu Gln Phe Cys Asn His Ala Asp Val Ile Asn Asn  
 165 170 175  
 Gln Ser Lys Gln Ile Asn Ala Leu Tyr Gln Ile His Gln Arg Asp Tyr  
 180 185 190  
 Lys Lys Leu Leu His Leu Ile Gln Leu Tyr Ser Glu Leu Ser Thr Cys  
 195 200 205  
 Gly Val Met Asp Gly Lys Arg Lys Glu Asn Leu Lys Ala Glu Ile Val  
 210 215 220  
 Asn Leu Ile Asn Ile  
 225

<210> 7986

<211> 110

<212> PRT

<213> B.fragilis

<400> 7986

Thr Ile Lys Ser Lys Ser Met Glu Val Val Thr Ile Glu Lys Arg Thr  
 1 5 10 15  
 Phe Leu Tyr Ile Cys Glu Arg Phe Thr Glu Phe Ala Lys Arg Thr Glu  
 20 25 30  
 Ser Leu Cys Asn Thr His Thr Gln Glu Val Glu Asn Trp Leu Asp Ser  
 35 40 45  
 Gln Glu Val Cys Leu Leu Leu Gly Phe Ser Lys Arg Thr Leu Gln Tyr  
 50 55 60  
 Tyr Arg Ser Ser Gly Arg Leu Ala Tyr Ser Gln Ile Gly Ser Lys Ile  
 65 70 75 80  
 Tyr Tyr Lys Ser Ser Asp Val Glu Arg Ile Ile Ala Asp Ser Glu Thr  
 85 90 95  
 Gln Asn Gln Ser Leu Lys Gln Ala Thr Pro Tyr Glu Lys Asn  
 100 105 110

<210> 7987

<211> 346

<212> PRT

<213> B.fragilis

<400> 7987

Leu Asn Lys Ser Arg Asp Ile Thr Pro Thr Ala Ser Leu Ile Lys Asp  
 1 5 10 15  
 Glu Leu Ile Lys Ala Leu Lys Asn Lys Lys Glu Glu Glu Lys Pro Ile  
 20 25 30  
 Phe Pro Asp Phe Ile Ser Tyr Ile Asp Tyr Tyr Met Asp Leu Cys Lys  
 35 40 45  
 Gln Gly Lys Ile Leu Asn Val Asp Gly Thr Lys Leu Ser Ser Ala Thr  
 50 55 60  
 Leu Ala Thr Tyr Lys Ser Thr Arg Asn Ile Leu Lys Lys Tyr Ala Ala  
 65 70 75 80  
 Ala Arg Asn Val Thr Ile Arg Ile Glu Glu Val Asp Ser Glu Phe Arg  
 85 90 95  
 Asn Asp Phe Ile Asn Phe Leu Tyr Asp Thr Lys His His Asn Gly Glu  
 100 105 110  
 Tyr Lys Leu Asn Ser Ile Gly Lys Phe Ile Lys Thr Ile Lys Val Phe  
 115 120 125  
 Met Arg His Ala Phe Asp Asn Asn Val Thr Ser Asn Asn Ser Val Phe

130		135		140
Lys Lys Asp Phe Val	Pro Leu Lys Glu Glu Ala Asn Thr Ile Tyr Leu			
145	150	155	160	
Thr Glu Ser Glu Leu	Glu Ala Leu Tyr Asn Leu Asp Leu Pro Ser Asn			
	165	170	175	
Gln Ala Glu Val Arg	Asp Cys Phe Leu Ile Ser Cys Tyr Thr Gly Leu			
	180	185	190	
Arg Tyr Ser Asp Ile	Ser Arg Leu Asp Val Lys His Ile Asn Val Glu			
	195	200	205	
Lys Asn Thr Ile Thr	Ile Val Thr Tyr Lys Thr Arg Asn Gln Val Ile			
	210	215	220	
Ile Pro Ile His Arg	Ile Val Arg Gly Ile Leu Lys Arg Tyr Gly Asn			
225	230	235	240	
Arg Pro Pro Lys Pro	Gln Cys Asn Gln Ser Thr Asn Arg Met Leu Lys			
	245	250	255	
Lys Leu Cys Glu Gln	Ala Gly Ile Thr Glu Ile Ile Ser Tyr Thr Glu			
	260	265	270	
Thr Val Gly Gly Ala	His Lys Glu Cys Thr Ala Arg Lys Cys Asp Lys			
	275	280	285	
Val Thr Thr His Thr	Ala Arg Arg Ser Phe Ala Thr Asn Ala Tyr Lys			
	290	295	300	
Arg Asn Val Pro Thr	Leu Ala Ile Met Ala Ile Thr Gly His Lys Thr			
305	310	315	320	
Glu Thr Ser Phe Met	Lys Tyr Ile Arg Ile Ser Lys Glu Glu Asn Ala			
	325	330	335	
Gln Leu Leu Gln Thr	His Glu Phe Phe Val			
	340	345		

<210> 7988  
 <211> 60  
 <212> PRT  
 <213> B.fragilis

<400> 7988
Leu Trp Glu Arg Glu Arg Ser Gly Lys Glu Arg Asp Thr Leu Leu Tyr
1 5 10 15
Tyr Ile Gly Glu Ile Tyr Arg Gly Glu Gly Lys Gly Asp Leu Pro Arg
20 25 30
Lys Gly Glu Gly Glu Val Phe Ala Gly Gly Lys Gly Met Phe Arg Gly
35 40 45
Arg Ile Ser Arg Lys Glu Leu Gly Leu Gly Glu Arg
50 55 60

<210> 7989  
 <211> 104  
 <212> PRT  
 <213> B.fragilis

<400> 7989
Val Met Arg Ser Thr Lys Trp Met Val Gly Ile Ile Leu Phe Ala Cys
1 5 10 15
Val Leu Thr Leu Ile Gly Val Thr Lys Ser Val Arg Ala Lys Asn Gln
20 25 30
Leu Gly Lys Leu Thr Phe Leu Gly Val Glu Ser Leu Ala Asp Gly Glu
35 40 45
Gly Gly Gly Ser Asp Tyr Arg Glu Ala Thr Pro His Asp Cys Asn Tyr
50 55 60
Ser Lys Asp Val Phe Leu Glu Gly Ala Asp His Ile Ile Asn Val Thr
65 70 75 80

Val Pro Gly Lys Lys Gly Ile Cys Asp Gly Thr Asn Gly Thr Cys Asn  
                     85                    90                    95  
 Ser Trp Pro Cys Arg Glu Val Lys  
                     100

<210> 7990  
 <211> 71  
 <212> PRT  
 <213> B.fragilis

<400> 7990  
 Phe Ile Leu Gly Phe Val Ser Ser Ser Phe Gly Phe Asn Phe Thr Thr  
 1                    5                    10                    15  
 Asp Asn Thr Asp Phe His Arg Leu Ile Ile Tyr Phe Ile Asp Asn Lys  
                     20                    25                    30  
 Ile Arg Ser Ser Val Lys Ile Cys Val Ile Cys Gly Glu Thr Gly Ser  
                     35                    40                    45  
 Leu Leu Phe Arg Phe Asn Tyr Ser His Pro Gly Leu Leu Gly Ala Ser  
                     50                    55                    60  
 Ala Gly Phe Lys Ile Ile Ser  
 65                    70

<210> 7991  
 <211> 370  
 <212> PRT  
 <213> B.fragilis

<400> 7991  
 Phe Trp Gly Gly Ser Cys Val Glu Asp Val Thr Ser Lys Leu Met Arg  
 1                    5                    10                    15  
 His Leu Trp Tyr His Pro Pro Leu Arg Thr Cys Ser Ser Asp Thr Ile  
                     20                    25                    30  
 Leu Arg Ala Ile Lys Glu Leu Thr Gln Glu Asn Ile Ser Tyr Thr Ser  
                     35                    40                    45  
 Asp Gln Gly Lys Thr Tyr Asp Phe Asn Thr Ala Asp Lys Leu Asn Thr  
                     50                    55                    60  
 Leu Leu Ile Asn Ala Leu Val Ser Thr Gly Glu Leu Lys Glu Ile Glu  
 65                    70                    75                    80  
 Glu Tyr Asp Val Asp Phe Asp His Gln Phe Leu Glu Thr Glu Lys Tyr  
                     85                    90                    95  
 Asp Ala Lys Pro Thr Tyr Lys Lys Phe Leu Gly Tyr Arg Pro Gly Val  
                     100                    105                    110  
 Tyr Val Ile Gly Asp Lys Ile Val Tyr Ile Glu Asn Ser Asp Gly Asn  
                     115                    120                    125  
 Thr Asn Val Arg Phe His Gln Ala Asp Thr His Lys Arg Phe Phe Ala  
                     130                    135                    140  
 Leu Leu Glu Ser Gln Asn Ile Arg Val Asn Arg Phe Arg Ala Asp Cys  
 145                    150                    155                    160  
 Gly Ser Cys Ser Lys Glu Ile Val Ser Glu Ile Glu Lys His Cys Lys  
                     165                    170                    175  
 His Phe Tyr Ile Arg Ala Asn Arg Cys Ser Ser Leu Tyr Asn Asp Ile  
                     180                    185                    190  
 Phe Ala Leu Arg Gly Trp Lys Thr Glu Glu Ile Asn Gly Ile Gln Phe  
                     195                    200                    205  
 Glu Leu Asn Ser Ile Leu Val Glu Lys Trp Glu Gly Lys Cys Tyr Arg  
                     210                    215                    220  
 Leu Val Ile Gln Arg Gln Arg Arg Asn Ser Gly Asp Leu Asp Leu Trp  
 225                    230                    235                    240  
 Glu Gly Glu Tyr Thr Tyr Arg Cys Ile Leu Thr Asn Asp Tyr Lys Ser

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<210> 7992
<211> 111
<212> PRT
<213> B.fragilis
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<210> 7993
<211> 74
<212> PRT
<213> B.fragilis
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<210> 7994
<211> 68
<212> PRT
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&lt;213&gt; B.fragilis

&lt;400&gt; 7994

Gly Lys Phe Ile Gly Glu Arg Glu Lys Gly Ile Cys Arg Glu Arg Gly  
 1 5 10 15  
 Lys Glu Lys Cys Leu Arg Glu Glu Lys Gly Cys Phe Glu Glu Glu Tyr  
 20 25 30  
 Arg Gly Arg Asn Trp Gly Trp Glu Arg Asp Lys Leu Lys Asn Arg Trp  
 35 40 45  
 Gly Ile Asp Gly Ser Trp Thr Gly Asn Gln Thr Arg Thr Glu Arg Glu  
 50 55 60  
 Leu Asn Glu Asn  
 65

&lt;210&gt; 7995

&lt;211&gt; 537

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7995

Cys Asp Ala Ile Tyr Asn Lys Thr Asp Leu Asn Arg Leu Lys Ser Met  
 1 5 10 15  
 Gly His Tyr Glu His Lys Thr Lys Glu Glu Leu Leu Glu Ile Val Cys  
 20 25 30  
 Lys Leu Glu Lys Lys Val Glu Gly Leu Ser Ser Glu Leu Asp Ser Leu  
 35 40 45  
 Lys Lys Gly Arg Phe Arg Glu Arg Tyr Ser Thr Arg Ile Leu Asp Ala  
 50 55 60  
 Leu Pro Asp Met Leu Thr Val Phe Asp His Asn Ala Asn Ile Val Glu  
 65 70 75 80  
 Leu Ala Ser Ser Pro Thr Thr Asn His Val Glu Gly Thr Thr Ser Asp  
 85 90 95  
 Ser Ile Ile Asn Ser Asn Val Lys Asp Ile Val Pro Glu Glu Ala Tyr  
 100 105 110  
 Glu Ser Val Arg His Asn Met Asp Lys Val Ile His Thr Gly Lys Ser  
 115 120 125  
 Ser Thr Ala Glu His Ser Leu Met Leu Asp Gly Val Leu His His Tyr  
 130 135 140  
 Glu Asn Arg Ile Phe Pro Leu Asp Asp Gln Tyr Leu Leu Cys Met Cys  
 145 150 155 160  
 Arg Asp Val Ser Gln Glu Thr Glu Met Ala Lys Ile Asn Glu Thr Gln  
 165 170 175  
 Arg Ser Glu Ile Val Arg Leu Asn Ser Leu Met Asn Asp Ile Leu Asn  
 180 185 190  
 Asn Ile Pro Val Tyr Leu Phe Val Lys Asp Thr Gly Asn Asp Phe Arg  
 195 200 205  
 Tyr Leu Tyr Trp Asn Lys Ala Phe Ala Glu His Ser Gly Ile Ser Val  
 210 215 220  
 Gln Arg Ala Val Gly Ser Thr Asp Ala Asp Ile Phe Pro Asp Lys Lys  
 225 230 235 240  
 Asp Ala Glu His Phe Arg Glu Asp Asp Leu Lys Val Met Lys Leu Gly  
 245 250 255  
 Arg Ile Glu Tyr Leu Glu Asn Tyr Thr Thr Met Ser Gly Glu Val Arg  
 260 265 270  
 Thr Val Thr Thr Met Lys Thr Val Val Pro Ser Gly Gly Gln His Pro  
 275 280 285  
 Tyr Ile Ile Gly Val Ser Trp Asp Val Thr Glu Ile Lys Lys Thr Glu  
 290 295 300  
 Lys Glu Leu Ile Ala Ala Arg Ile Lys Ala Glu Glu Ala Asp Arg Met

305 310 315 320  
 Lys Ser Ser Phe Leu Ala Asn Met Ser His Glu Ile Arg Thr Pro Leu  
 325 330 335  
 Asn Ala Ile Val Gly Phe Ser Lys Leu Ile Ile Glu Ala Asp Asn Glu  
 340 345 350  
 Cys Glu Lys Arg Gln Tyr Ala Asp Ile Val Glu His Asn Ser Thr Val  
 355 360 365  
 Leu Leu Asn Leu Phe Asn Asp Ile Leu Asp Leu Ser Ala Leu Glu Ala  
 370 375 380  
 Gly Ser Leu Glu Leu Ser Tyr His Pro Val Arg Leu Lys Asp Ile Cys  
 385 390 395 400  
 Leu Gln Leu Tyr Glu Leu His Val Lys Ser Val Lys Pro Glu Val Arg  
 405 410 415  
 Leu Val Leu Asp Glu Val Asp Ser Gln Leu Cys Ile Gln Gly Asp Trp  
 420 425 430  
 Glu Arg Ile Ser Gln Val Leu Val Asn Leu Ile Thr Asn Ala Ile Lys  
 435 440 445  
 Phe Thr Ser Val Gly Glu Ile His Phe Gly Phe Gln Lys Lys Ala Asp  
 450 455 460  
 Met Val Gln Phe Tyr Met Ser Asp Thr Gly Lys Gly Ile Pro Ala Glu  
 465 470 475 480  
 Arg Val Ala Thr Ile Phe Gln Arg Phe Gly Lys Ile Asp Asp Phe Val  
 485 490 495  
 Gln Gly Thr Gly Leu Gly Leu Thr Ile Cys Arg Met Leu Val Glu Lys  
 500 505 510  
 Met Gly Gly Arg Ile Trp Val Arg Ser Lys Gln Gly Glu Gly Thr Val  
 515 520 525  
 Phe Tyr Phe Thr Leu Pro Met Ala Lys  
 530 535

&lt;210&gt; 7996

&lt;211&gt; 146

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7996

Lys Ser Tyr Ile Ser Ala Ser Arg Gly Lys Asn Ala Leu Lys Asn Ser  
 1 5 10 15  
 Tyr Leu His Lys Val Leu Ala Ile Ile Asn Val Glu Leu Glu Leu Leu  
 20 25 30  
 Ser Leu Lys Ile Lys His Pro Glu Ser Phe Val Ser Pro Ile Ser Pro  
 35 40 45  
 Thr Ser Glu Ser Asp Leu Tyr Val Ile Pro Lys Ser Lys Asp Leu Gly  
 50 55 60  
 Ile Ile Gly Ile Ala Glu Ile Val Ile Gly Leu Ser Phe Leu Gly Glu  
 65 70 75 80  
 Val Val Gly Lys Asp Gly Lys Pro Val Pro Leu Val Arg Leu Ala His  
 85 90 95  
 Gly Phe Glu Val Leu Phe Asn Leu Lys Phe Gly Ser Ile Tyr Asp Lys  
 100 105 110  
 Leu Asp Ala Ile Phe Met Arg Lys Pro Phe Asn Leu Thr Lys Thr Leu  
 115 120 125  
 Asp Ala Leu Lys Ser Ala Ile Asn Lys Glu Ala Arg Lys Arg Ala Asn  
 130 135 140  
 Lys His  
 145

&lt;210&gt; 7997

&lt;211&gt; 692

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7997

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Ser Tyr Asn Met Gln Ser Met Ile Thr Thr Gln Leu Leu Arg Pro Gln
1      5      10      15
Ser Ile Val Val Gly Ala Ser Asn Thr His Lys Pro Gly Gly
20      25      30
Ala Ile Leu Lys Asn Leu Ile Asn Gly Gly Tyr Gln Gly Glu Leu Arg
35      40      45
Ala Val Asn Pro Lys Glu Thr Glu Val Gln Gly Val Pro Ser Phe Ala
50      55      60
Asp Ala Lys Glu Leu Pro Asp Thr Asp Leu Ala Ile Leu Ala Ile Pro
65      70      75      80
Ala Val Leu Cys Pro Glu Val Val Glu Thr Leu Ala Ala Glu Lys Gln
85      90      95
Thr Arg Ala Phe Ile Ile Leu Ser Ala Gly Phe Gly Glu Glu Thr Gln
100     105     110
Glu Gly Ala Leu Leu Glu Glu Arg Ile Leu Glu Thr Val Asn Lys Tyr
115     120     125
Gly Ala Ser Leu Ile Gly Pro Asn Cys Ile Gly Leu Met Asn Thr Trp
130     135     140
His His Ser Val Phe Thr Gln Pro Ile Pro Asn Leu Asn Pro His Gly
145     150     155     160
Val Asp Leu Ile Ser Ser Ser Gly Ala Thr Ala Val Phe Ile Leu Glu
165     170     175
Ser Ala Val Thr Lys Gly Leu Gln Phe Asn Ser Val Trp Ser Val Gly
180     185     190
Asn Ala Lys Gln Ile Gly Val Glu Asp Val Leu Gln Tyr Met Asp Glu
195     200     205
Asn Phe Asp Val Arg Lys Asp Ser Lys Ile Lys Leu Ile Tyr Ile Glu
210     215     220
Ser Ile Lys Asn Pro Asp Arg Leu Leu Phe His Ala Ser Ser Leu Ile
225     230     235     240
Arg Lys Gly Cys Lys Ile Ala Ala Ile Lys Ala Gly Ser Ser Glu Ser
245     250     255
Gly Ser Arg Ala Ala Ser Ser His Thr Gly Ala Ile Ala Ser Ser Asp
260     265     270
Ser Ala Val Glu Ala Leu Phe Arg Lys Ala Gly Ile Val Arg Cys Tyr
275     280     285
Ser Arg Gly Glu Leu Thr Thr Val Gly Cys Ile Phe Thr Leu Pro Glu
290     295     300
Leu Lys Gly Lys Asn Phe Ala Ile Val Thr His Ala Gly Gly Pro Gly
305     310     315     320
Val Met Leu Thr Asp Ala Leu Ser Lys Gly Gly Leu Asn Val Pro Lys
325     330     335
Leu Glu Gly Pro Val Ala Glu Glu Leu Lys Ser Lys Leu Phe Pro Gly
340     345     350
Ala Ser Val Gly Asn Pro Ile Asp Ile Leu Ala Thr Gly Thr Pro Glu
355     360     365
His Leu Ser Ile Ala Ile Asp Tyr Cys Glu Glu Lys Phe Glu Asn Ile
370     375     380
Asp Ala Ile Leu Ala Ile Phe Gly Thr Pro Gly Leu Val Thr Met Phe
385     390     395     400
Glu Thr Tyr Glu Val Leu His Gln Lys Met Leu Thr Cys Lys Lys Pro
405     410     415
Leu Phe Pro Val Leu Pro Ser Val Arg Thr Ala Gly Glu Glu Val Ala
420     425     430
Phe Phe Leu Glu Lys Gly His Val Asn Phe Ala Asp Glu Val Met Leu

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435 440 445  
 Gly Thr Ala Leu Ser Arg Ile Ile Asn Ala Pro Lys Pro Ala Val Pro  
 450 455 460  
 Glu Ile Glu Leu Phe Gly Val Asp Val Pro Arg Ile Arg Arg Ile Ile  
 465 470 475 480  
 Asp Ser Ile Pro Gln Asn Gly Tyr Ile Glu Pro His Tyr Val Gln Ala  
 485 490 495  
 Leu Leu His Ser Ala Gly Ile Pro Val Val Glu Glu Phe Val Ser Gly  
 500 505 510  
 Asn Lys Asp Glu Val Leu Ala Phe Ala Arg Arg Cys Gly Phe Pro Val  
 515 520 525  
 Val Ala Lys Val Val Gly Pro Val His Lys Ser Asp Val Gly Gly Val  
 530 535 540  
 Val Leu Asn Ile Lys Gly Glu Gln His Leu Ala Phe Glu Phe Asp Arg  
 545 550 555 560  
 Met Met Gln Ile Pro Glu Ala Arg Ala Ile Met Val Gln Pro Met Leu  
 565 570 575  
 Lys Gly Thr Glu Met Phe Ile Gly Ala Lys Tyr Glu Glu Lys Phe Gly  
 580 585 590  
 His Val Val Leu Cys Gly Leu Gly Gly Ile Phe Val Glu Val Leu Lys  
 595 600 605  
 Asp Val Ser Ser Gly Leu Ala Pro Leu Ser Tyr Glu Glu Ala Tyr Ser  
 610 615 620  
 Met Ile His Ser Leu Arg Ala Tyr Lys Ile Ile Gln Gly Thr Arg Gly  
 625 630 635 640  
 Gln Lys Gly Val Asn Glu Asp Lys Phe Ala Glu Ile Ile Val Arg Leu  
 645 650 655  
 Ser Thr Leu Leu Arg Phe Ala Thr Glu Ile Lys Glu Met Asp Ile Asn  
 660 665 670  
 Pro Leu Leu Ala Thr Glu Lys Glu Val Val Ala Val Asp Ala Arg Ile  
 675 680 685  
 Arg Ile Glu Lys  
 690

&lt;210&gt; 7998

&lt;211&gt; 282

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 7998

Glu Lys Asp Met Lys Lys Leu Gly Ile Phe Lys Tyr Lys Tyr Val Gly  
 1 5 10 15  
 Glu Asn Val Ile Gln Ser Gly Phe Thr Val Leu Asp Lys Ile Thr Tyr  
 20 25 30  
 Gly Trp Lys Asn Gly Glu Leu Ile Val Ile Gly Gly Arg Pro Ala Met  
 35 40 45  
 Gly Lys Thr Ala Phe Gly Leu Ser Leu Val Arg Asn Ile Ala Ile Ile  
 50 55 60  
 Asp Arg Ile Pro Thr Ala Tyr Phe Ser Leu Glu Met Ser Ser Val Gln  
 65 70 75 80  
 Phe Met Asn Arg Phe Leu Leu Asn Leu Ser Gly Ile Glu Arg Phe Gln  
 85 90 95  
 Ser Lys Pro Tyr Asn Lys Lys Glu Gln Ala Ile Leu Asp Asp Ala Glu  
 100 105 110  
 Lys Val Ile Asp Asp Ala Pro Ile Phe Leu Asp Asp Thr Pro Ser Leu  
 115 120 125  
 Ser Val Gln Glu Leu Arg Thr Arg Ala Phe Arg Leu Val Arg Glu Tyr  
 130 135 140  
 Gln Val Lys Leu Ile Ile Ile Asp Tyr Leu Gln Leu Met Asn Ala Ser



145                      150                      155                      160  
 Gly Met Val Phe Asn Asn Arg Lys Glu Glu Ile Ser Thr Ile Thr Arg  
                                  165                      170                      175  
 Ser Leu Lys Ala Leu Ala Met Glu Leu Asn Ile Pro Ile Ile Ala Phe  
                                  180                      185                      190  
 Ser Gln Leu Asn Arg Gly Val Glu Ser Arg Glu Gly Ile Glu Gly Lys  
                                  195                      200                      205  
 Arg Pro Gln Leu Arg Asp Leu Arg Glu Ser Gly Asn Ile Glu Gln Asp  
                                  210                      215                      220  
 Ala Asp Met Val Cys Phe Leu His Arg Pro Glu Tyr Tyr Lys Ile Tyr  
 225                                   230                                   235                                   240  
 Gln Asp Asp Lys Gly Asn Asp Leu His Gly Met Ala Glu Ile Ile Val  
                                  245                                   250                                   255  
 Ser Lys Asn Arg Asn Gly Lys Thr Gly Asp Ala Leu Leu Lys Phe Ser  
                                  260                                   265                                   270  
 Gly Gln Phe Leu Arg Phe Glu Asn Pro Thr  
                                  275                                   280

<210> 7999

<211> 260

<212> PRT

<213> B.fragilis

<400> 7999

Gln Glu Asp Met His Ser His Pro Ser Pro Lys Phe Ser Val Ile Thr  
 1                                      5                                      10                                      15  
 Val Thr Tyr Asn Ala Glu Lys Val Leu Glu Asp Thr Val Gln Ser Val  
                                  20                                      25                                      30  
 Ile Ser Gln Thr Tyr His His Val Glu Tyr Ile Ile Ile Asp Gly Ala  
                                  35                                      40                                      45  
 Ser Lys Asp Gly Thr Leu Glu Ile Val Asn Arg Tyr Arg Asp Arg Ile  
                                  50                                      55                                      60  
 Asn Gln Leu Val Ser Glu Pro Asp Lys Gly Leu Tyr Asp Ala Met Asn  
 65                                      70                                      75                                      80  
 Lys Gly Ile Ala Leu Ala Thr Gly Asp Tyr Leu Cys Phe Leu Asn Ala  
                                  85                                      90                                      95  
 Gly Asp Ser Phe His Glu Asp Asp Thr Leu Gln Lys Ile Val His Ser  
                                  100                                      105                                      110  
 Ile Asn Gly Asn Glu Leu Pro Asp Ile Leu Tyr Gly Glu Thr Ala Leu  
                                  115                                      120                                      125  
 Val Asp Ala Glu Arg His Phe Leu Arg Met Arg Arg Leu Ser Ala Pro  
                                  130                                      135                                      140  
 Glu Thr Leu Asn Trp Lys Ser Phe Lys Gln Gly Met Leu Val Cys His  
 145                                      150                                      155                                      160  
 Gln Ala Phe Phe Pro Arg His Thr Leu Ile Glu Pro Tyr Asp Leu Gln  
                                  165                                      170                                      175  
 Tyr Arg Phe Ser Ala Asp Phe Asp Trp Cys Ile Arg Ile Met Lys Lys  
                                  180                                      185                                      190  
 Ala Arg Thr Phe His Asn Thr His Leu Ile Leu Ile Asp Tyr Leu Ala  
                                  195                                      200                                      205  
 Glu Gly Met Thr Thr Gln Asn His Lys Ala Ser Leu Leu Glu Arg Phe  
                                  210                                      215                                      220  
 Arg Ile Met Thr Arg His Tyr Gly Leu Leu Ser Thr Leu Ala Tyr His  
 225                                      230                                      235                                      240  
 Ala Trp Phe Val Val Arg Ser Leu Ser Arg Asn Ser Ala Thr Pro Ser  
                                  245                                      250                                      255  
 Asp Ala Pro Phe  
                                  260

<210> 8000  
 <211> 380  
 <212> PRT  
 <213> B.fragilis

<400> 8000

Ser Asp Arg Ile Met Lys Lys Ile Leu Leu Val Phe Gly Thr Arg Pro  
 1 5 10 15  
 Glu Ala Ile Lys Met Ala Pro Leu Val Lys Ala Leu Gln Arg Asp Thr  
 20 25 30  
 Glu His Phe Glu Thr Lys Val Cys Val Thr Ala Gln His Arg Gln Met  
 35 40 45  
 Leu Asp Gln Val Leu Glu Val Phe Asp Ile Ile Pro Asp Tyr Asp Leu  
 50 55 60  
 Asn Ile Met Ala Pro Asn Gln Asp Leu Tyr Asp Ile Thr Thr Lys Val  
 65 70 75 80  
 Leu Leu Gly Leu Arg Asp Val Leu Lys Asp Phe Cys Pro Asp Thr Val  
 85 90 95  
 Leu Val His Gly Asp Thr Thr Thr Ser Met Ala Ala Ser Leu Ala Ala  
 100 105 110  
 Phe Tyr Arg Gln Val Ala Val Gly His Val Glu Ala Gly Leu Arg Thr  
 115 120 125  
 Tyr Asp Met Leu Ser Pro Trp Pro Glu Glu Met Asn Arg Gln Val Thr  
 130 135 140  
 Asp Arg Ile Cys Thr Tyr Tyr Phe Ala Pro Thr Gly Lys Ser Lys Gln  
 145 150 155 160  
 Asn Leu Leu Gln Glu Asn Ile Asp Ala Lys Lys Ile Phe Val Thr Gly  
 165 170 175  
 Asn Thr Val Ile Asp Ala Leu Leu Met Ala Val Asp Ile Ile Ser Lys  
 180 185 190  
 Lys Pro Gly Ile Lys Glu Lys Leu His Gln Glu Leu Arg Asp Lys Gly  
 195 200 205  
 Tyr Glu Val Gly Gln Arg Glu Tyr Ile Leu Val Thr Gly His Arg Arg  
 210 215 220  
 Glu Asn Phe Gly Glu Gly Phe Leu His Ile Cys Lys Ala Ile Arg Glu  
 225 230 235 240  
 Leu Ala Ala Leu His Pro Glu Met Asp Ile Val Tyr Pro Val His Leu  
 245 250 255  
 Asn Pro Asn Val Gln Lys Pro Val Tyr Glu Leu Leu Ser Gly Val Asp  
 260 265 270  
 Asn Val Tyr Leu Ile Ser Pro Leu Asp Tyr Leu Pro Phe Ile Tyr Ala  
 275 280 285  
 Met Gln His Ser Thr Leu Leu Leu Thr Asp Ser Gly Gly Val Gln Glu  
 290 295 300  
 Glu Ala Pro Ser Leu Gly Lys Pro Val Leu Val Met Arg Asn Thr Thr  
 305 310 315 320  
 Glu Arg Pro Glu Ala Val Glu Ala Gly Thr Val Lys Leu Val Gly Thr  
 325 330 335  
 Asp Ala Glu Ala Ile Val Ser Asn Val Thr Glu Leu Leu Arg Asn Lys  
 340 345 350  
 Glu Leu Tyr Arg Arg Met Ser Glu Thr His Asn Pro Tyr Gly Asp Gly  
 355 360 365  
 His Ala Cys Glu Arg Ile Leu Ser Val Leu Thr Arg  
 370 375 380

<210> 8001  
 <211> 1014  
 <212> PRT  
 <213> B.fragilis

&lt;400&gt; 8001

Asp Lys Leu Ile Met Lys Leu Val Lys Tyr Phe Leu Gln Lys Arg Ala  
 1 5 10 15  
 Val Thr Ile Leu Leu Val Leu Val Leu Ala Gly Gly Leu Phe Ser  
 20 25 30  
 Tyr Phe Lys Met Gly Lys Leu Glu Asp Ala Pro Phe Thr Ile Lys Gln  
 35 40 45  
 Ala Leu Val Leu Thr Ser Tyr Pro Gly Ala Ser Pro Ala Glu Val Gln  
 50 55 60  
 Ser Gln Val Thr Asp Ile Leu Glu Glu Ala Ile Gln Ser Leu Gly Glu  
 65 70 75 80  
 Leu Tyr Tyr Leu Lys Thr Glu Asn Arg Ala Gly Leu Ser Lys Ile Thr  
 85 90 95  
 Val Tyr Val Lys Lys Glu Ile Arg Ala Glu Glu Met Gln Gln Leu Trp  
 100 105 110  
 Asp Lys Leu Arg Arg Lys Val Asn Asp Val Gln Asp Lys Leu Pro Ala  
 115 120 125  
 Gly Ala Gly Thr Ser Ile Val Asn Asp Asp Phe Gly Asp Val Leu Gly  
 130 135 140  
 Val Phe Tyr Gly Leu Thr Gly Asp Gly His Thr Tyr Arg Glu Leu Glu  
 145 150 155 160  
 Asp Gln Ala Lys Phe Ile Lys Asn Glu Leu Leu Lys Val Lys Asp Val  
 165 170 175  
 Ala Lys Ile Glu Ile Tyr Gly Val Gln Thr Pro Thr Ile Asp Val Leu  
 180 185 190  
 Ile Ser Pro Ser Val Met Ala Gln Ser Gly Val Thr Thr Ala Asp Met  
 195 200 205  
 Met Arg Ala Phe Glu Thr Gln Asn Lys Met Val Asp Ala Gly Gly Ile  
 210 215 220  
 Asn Ala Gly Thr Asn Arg Ile Arg Ile Glu Ser Thr Gly Asn Phe Tyr  
 225 230 235 240  
 Ser Leu Asp Asp Ile Arg Asp Leu Thr Ile Val Ser Arg Thr Gly Glu  
 245 250 255  
 His Phe Arg Leu Ala Asp Ile Ala Gln Ile Glu Glu Gly Tyr Gln Thr  
 260 265 270  
 Pro Pro Ala Asn Gln Met Arg Ile Asn Gly Ser Pro Ala Val Gly Ile  
 275 280 285  
 Ala Ile Ser Thr Val Pro Thr Gly Asn Val Val Asp Met Ala Glu Asp  
 290 295 300  
 Ile Lys Met Arg Ile Gly Glu Leu Ser Gln Ser Met Pro Asp Gly Tyr  
 305 310 315 320  
 Glu Leu Ile Ser Ile Tyr Asp Gln Gly Tyr Glu Ser Ala Val Ala Asn  
 325 330 335  
 Gln Gly Phe Ile Leu Asn Leu Ile Ile Ser Val Ile Thr Val Val Ala  
 340 345 350  
 Ile Leu Leu Phe Phe Ile Gly Phe Lys Asn Gly Leu Leu Ile Gly Ser  
 355 360 365  
 Gly Leu Val Phe Ser Ile Phe Ala Thr Leu Ile Val Met Met Ala Cys  
 370 375 380  
 Asp Ile Ala Leu Gln Arg Met Ser Leu Ala Ala Ile Ile Ile Ala Met  
 385 390 395 400  
 Gly Met Leu Val Asp Asn Ala Ile Val Val Ser Asp Ser Ala Leu Ile  
 405 410 415  
 Asn Met Glu Arg Gly Met Arg Lys Arg Val Ala Ile Met Arg Ala Cys  
 420 425 430  
 Ser Ser Thr Ala Leu Pro Leu Leu Ala Ala Thr Val Ile Ala Ile Leu  
 435 440 445  
 Thr Phe Leu Pro Ile Tyr Tyr Ser Pro His Ile Thr Gly Glu Leu Leu

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

[illegible]

Val Leu Leu Asp Glu Ile Asp Val Gln Arg Arg Glu Gly Val Val Pro  
 930 935 940  
 Tyr Thr Ala Val Ile Glu Ser Thr Val Ser Arg Thr Arg Pro Val Leu  
 945 950 955 960  
 Met Ala Ala Thr Thr Thr Ile Leu Gly Met Val Pro Leu Leu Phe Asp  
 965 970 975  
 Ile Ala Phe Gly Gly Met Ala Ala Thr Ile Ile Phe Gly Leu Thr Phe  
 980 985 990  
 Ala Thr Leu Leu Thr Leu Phe Val Thr Pro Ala Leu Tyr Ala Ile Phe  
 995 1000 1005  
 Tyr Lys Ile Lys Glu Lys  
 1010

<210> 8002  
 <211> 122  
 <212> PRT  
 <213> B.fragilis

<400> 8002  
 His Gly Thr Ile Ile Tyr Ile Ser Phe Val Pro Leu Ile Tyr Arg Cys  
 1 5 10 15  
 Ile Val Asn Arg Gly Phe Asn Ser Asn Leu Lys Lys Met Lys Asn Glu  
 20 25 30  
 Gly Ile Ile Leu Ile Lys Gly Thr Glu Leu Gln Asp Leu Ile Asn Lys  
 35 40 45  
 Ala Val Ala Leu Ala Phe Glu Asn Val Cys Leu Ala Asp Arg Arg Lys  
 50 55 60  
 Ala Lys Thr Ala Glu Lys Leu Leu Ser Arg Asn Glu Ala Ser Lys Ala  
 65 70 75 80  
 Leu Lys Ile Ser Leu Ser Ser Leu Asn Arg Arg Val Asn Asp Gly Ser  
 85 90 95  
 Ile Lys Cys Tyr Lys Ile Gly Ala Arg Ser Phe Phe Lys Glu Ser Glu  
 100 105 110  
 Leu Glu Asn Leu Leu Thr Phe Leu Asn Lys  
 115 120

<210> 8003  
 <211> 213  
 <212> PRT  
 <213> B.fragilis

<400> 8003  
 His Pro Asn Met Lys Lys Leu Tyr Ser Leu Leu Leu Thr Ala Leu Phe  
 1 5 10 15  
 Ala Leu Pro Ala Ala His Val His Ala Thr Asp Tyr Thr Gln Gly Leu  
 20 25 30  
 Ser Ile Trp Phe Asp Thr Pro Asn Thr Leu Gln Gly Arg Ala Ile Trp  
 35 40 45  
 Tyr Gly Ser Arg Pro Asp Leu Trp Lys Gly Glu Ser Lys Pro Glu Ser  
 50 55 60  
 Ala Gly Asp Thr Ala Arg Asn Pro Asp Ala Asn Trp Glu Ser Gln Ser  
 65 70 75 80  
 Leu Pro Ile Gly Asn Gly Ser Ile Gly Ala Asn Ile Met Gly Ser Ile  
 85 90 95  
 Glu Ala Glu Arg Ile Thr Phe Asn Glu Lys Thr Leu Trp Arg Gly Gly  
 100 105 110  
 Pro Asn Thr Ser Arg Gly Ala Asp Ala Tyr Trp Asn Val Asn Lys Gln  
 115 120 125  
 Ser Ala His Val Leu Lys Glu Ile Arg Gln Ala Phe Thr Asp Gly Asp

130 135 140  
 Gln Lys Lys Ala Glu Met Leu Thr Arg Lys Asn Phe Asn Ser Glu Val  
 145 150 155 160  
 Pro Tyr Glu Ser Asn Arg Glu Lys Pro Phe Arg Phe Gly Asn Phe Thr  
 165 170 175  
 Thr Met Gly Glu Leu Tyr Ile Glu Thr Gly Leu Ser Thr Val Asn Met  
 180 185 190  
 Ser Asp Tyr Lys Arg Ile Leu Ser Met Asp Ser Ala Leu Gly Arg Cys  
 195 200 205  
 Thr Ile Gln Glu Arg  
 210

<210> 8004  
 <211> 396  
 <212> PRT  
 <213> B.fragilis

<400> 8004

Val Met Asn Ile Leu Ile Gln Gln Thr Lys Ala Phe Pro His Arg Ala  
 1 5 10 15  
 Asn Ser Phe Tyr Trp Phe Tyr Ala Gln Leu Thr Glu Trp Leu Thr Ala  
 20 25 30  
 His Gly Val Asp Ser Lys Leu Tyr Phe Ser Tyr Leu Glu Leu Ala Asp  
 35 40 45  
 Ser Glu Phe Glu Asn Gly Leu Leu Leu Pro Asp His Tyr Ser Gln Phe  
 50 55 60  
 Tyr Thr Pro Arg Asn Ile Glu Ala Ile Cys Arg Phe Ile Ile Asp Lys  
 65 70 75 80  
 Gln Ile Asp Val Ile Leu Asp Tyr Ser His Val Ile Pro Gly Asp Thr  
 85 90 95  
 Arg Lys Tyr Tyr Leu Glu Ile Lys Lys Arg Asn Pro Gly Ile Lys Ile  
 100 105 110  
 Cys Thr Met Ile His Asn Cys Pro Ser His Thr Thr Gln Leu Lys Gln  
 115 120 125  
 Tyr Glu Leu Ser Thr Leu Arg Phe Lys Asp Val His Gly Pro Lys Lys  
 130 135 140  
 Leu Phe Gln Trp Met Leu Pro Gln Leu Tyr Ile Ser Leu Leu Lys Lys  
 145 150 155 160  
 Val Val Ser His Gln Asn Arg Ser Ala Tyr Asp Thr Leu Asp Glu Val  
 165 170 175  
 Val Leu Leu Ser Pro Ala Tyr Ile Pro Glu Phe Lys Lys Leu Ile Gly  
 180 185 190  
 Lys Lys Asp Ala Trp Lys Leu Ser Ala Ile Pro Asn Ala Ile Lys Pro  
 195 200 205  
 Val His Ser Asn Ile Pro Ile Glu Glu Lys Asp Lys Glu Ile Ile Phe  
 210 215 220  
 Val Gly Arg Met Ala Thr Glu Lys Ala Leu Pro Lys Leu Leu Lys Ile  
 225 230 235 240  
 Trp Gly Met Val Gln Asp Lys Leu Pro Asp Trp Lys Leu Thr Leu Val  
 245 250 255  
 Gly Asp Gly Pro Gln Phe Gly Thr Cys Arg Gln Ile Ile Ala Glu Lys  
 260 265 270  
 Lys Leu Lys Arg Val Cys Leu Thr Gly His Gln Met Ser Ile Pro Tyr  
 275 280 285  
 Ile Asp Arg Ala Arg Ile Leu Cys Leu Thr Ser Val Ile Glu Gly Leu  
 290 295 300  
 Pro Thr Val Phe Thr Glu Ala Met Ser Leu Gly Val Ile Pro Ile Gly  
 305 310 315 320  
 Phe Asp Ser Phe Asn Ala Ile Tyr Asp Met Ile Asp Asp Gly Ile Asp



Arg Gln Gly Gly Gly Pro Gly Glu Tyr Ser Ile Ile Ser Lys Phe Thr  
 115 120 125  
 Ile Thr Gly Asp Ser Leu Leu Ile Gln Asp Tyr Asn Leu His Lys Tyr  
 130 135 140  
 Leu Val Tyr Ser Ile Lys Glu Asp Cys Phe Val Ser Asp Ile Arg Tyr  
 145 150 155 160  
 Glu Pro His His His Ser Ile Val Ala Tyr Pro Asp Ile Leu Tyr Phe  
 165 170 175  
 Val Ser Gly Tyr Phe Pro Ala Asp Ala Gly Cys Tyr Asn Leu Tyr Arg  
 180 185 190  
 Phe Asp Leu Arg Asn Ser Ser Met Glu Ser Tyr Leu Pro Phe Ser Gln  
 195 200 205  
 Lys Ile Ala Val Asn Arg Ser Ala Trp Ser Ile Glu Glu Gln Cys Ser  
 210 215 220  
 Arg Val Cys Glu Arg Ser Phe Val Phe Tyr Ala Leu Ser Asp Thr Ile  
 225 230 235 240  
 Tyr Gln Val Asn Lys Asp Lys Ala Ile Pro Val Tyr Thr Leu Asn Phe  
 245 250 255  
 Ser Lys Arg Ser Ile Pro Asp Asp Phe Lys Glu Ser His Ser Gly Asp  
 260 265 270  
 Glu Ile Met Asp Leu Ala Phe Gln Glu Gly Tyr Val Arg Gly Pro Ile  
 275 280 285  
 His Leu Gln His Ser Asp Arg Trp Met Leu Gly Thr Tyr Val Asp Gly  
 290 295 300  
 Lys Glu Tyr Arg Tyr Met Leu Ile Asp Lys Lys Thr Gly Gln Tyr Gln  
 305 310 315 320  
 Ile Gly Lys Gln Leu Gly Ala Arg Lys Glu Gly Asn Leu Thr Ile Pro  
 325 330 335  
 His Asn Phe Leu Ile Glu Asp Asn Tyr Phe Ile Ser Trp Leu Pro Val  
 340 345 350  
 Arg Leu Leu Lys Leu Trp Lys Asn His Phe Ser Pro Asn Thr Phe Arg  
 355 360 365  
 Asp Lys Gly Arg Val Gly Lys Trp Glu Arg Leu Ile Asp Ser Leu Asp  
 370 375 380  
 Ile Asp Asp Asn Pro Val Leu Ile Lys Cys Lys Ile Arg Asn Asn Glu  
 385 390 395 400  
 Thr

&lt;210&gt; 8007

&lt;211&gt; 85

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8007

Tyr Ser Leu Ile Ile Lys His Phe Met Leu Met Asn Asp Leu Ser Lys  
 1 5 10 15  
 Thr Arg Ile Ile Ile Leu Leu Thr Asp Ser Ser Gln Lys Val Thr Asp  
 20 25 30  
 Thr Glu Met Gln Asp Ala Tyr Asp Glu Phe Ile Arg Cys Ile Ala Thr  
 35 40 45  
 Ile Gly Asn Ser Lys Asp Asn Ser Asn Ile Phe Arg Met Leu Asn Leu  
 50 55 60  
 Thr Arg Ile Glu Ile Ala Pro Leu Lys Glu Leu Tyr Gln Cys Glu Gln  
 65 70 75 80  
 Gly Glu Lys Cys Ala  
 85

&lt;210&gt; 8008



<211> 339  
 <212> PRT  
 <213> B.fragilis

<400> 8008

Glu Asn Thr Met Lys Val Thr Ile Tyr Pro Tyr Ser Ile Asn Lys Ser  
 1 5 10 15  
 Asp Ile Arg Val Asn Pro Tyr Ile Ser Asp Phe Ile His Ala Leu Gln  
 20 25 30  
 Gln Asn Gly Ile Thr Ile Ala Asn Pro Pro His Lys Asn Pro Leu Phe  
 35 40 45  
 Ser Leu Ile Pro Arg Lys Ala Asp Ser Asp Ala Tyr Ile Phe His Trp  
 50 55 60  
 Pro Glu Asn Val Pro Asp Tyr Lys Tyr Gly Met Leu Gln Thr Leu Ala  
 65 70 75 80  
 Ala Ile Trp Leu Leu Phe Lys Ile Lys Cys His His Lys Lys Ile Ile  
 85 90 95  
 Trp Phe Leu His Asn Lys Gln Pro His Val Met Lys His Arg Trp Ser  
 100 105 110  
 Lys Lys Leu Leu Ile His Leu Leu Leu Arg Lys Ala Asp Leu Ile Val  
 115 120 125  
 Thr His Ala Thr Glu Gly Ile Lys Val Val Gln Asp Gln Tyr Pro Lys  
 130 135 140  
 Ala Val Ala Lys Thr Val Phe Leu His His Pro Thr Lys Asn Arg Ile  
 145 150 155 160  
 Glu Glu Tyr Ile Pro Gln Pro Pro Glu Thr Asp Leu Leu Ile Trp Gly  
 165 170 175  
 Asn Ile Ser Arg Tyr Lys Gly Val Pro Glu Phe Val Arg Phe Ala Thr  
 180 185 190  
 Gln His Ser Leu Lys Leu Lys Thr Lys Ile Ile Gly Lys Cys Ser Ser  
 195 200 205  
 Gln Glu Leu Leu Glu Glu Leu Arg Lys Glu Ser Asn Glu Met Ile Ser  
 210 215 220  
 Ile Glu Asp Arg Ser Ile Pro Phe Glu Glu Leu Lys Gln Glu Ile Arg  
 225 230 235 240  
 Arg Ser Arg Phe Val Leu Val Pro Tyr Ala Ala Glu Ser Ile Leu Ser  
 245 250 255  
 Ser Gly Ile Leu Met Asp Ser Leu Ser Phe Gly Ala Lys Val Ile Gly  
 260 265 270  
 Pro Ala Val Gly Ser Phe Arg Asp Tyr Ala Ala Glu Pro Leu Leu Asn  
 275 280 285  
 Val Tyr Thr Phe His Thr Phe Asp Asp Ile Gln Glu Leu Val Asp Lys  
 290 295 300  
 Ala Asn Glu Ala Thr Asp Ile Ala Gly Tyr Asn Arg Phe Leu Asn Ala  
 305 310 315 320  
 His Ser Trp Asn Glu Phe Gly Lys Lys Phe Gln Asn Leu Leu Gln Lys  
 325 330 335  
 Ile Ile Gln

<210> 8009  
 <211> 95  
 <212> PRT  
 <213> B.fragilis

<400> 8009

Phe Tyr Gln Ile Lys Ile Ser Pro Glu Glu Lys Tyr Phe Phe Arg Gly  
 1 5 10 15  
 Tyr Phe Cys Phe Ile Thr Gln Ser Ser Leu His Pro Glu Lys Tyr Ile

20 25 30  
 His His Thr Glu Ile Ser Lys Pro Asn Val Thr Ala Ile Arg Ile Leu  
 35 40 45  
 Leu Leu Thr Phe Tyr Tyr Leu Tyr Cys Lys Ile Gln Lys Val Ser Tyr  
 50 55 60  
 Leu Thr Phe Trp Tyr Phe Ser Thr Pro Thr Phe Leu Asn Ile Asn Thr  
 65 70 75 80  
 Ile Lys Gln Asn Arg Ile Glu Asn Arg Asn Glu Lys Thr Lys Pro  
 85 90 95

<210> 8010  
 <211> 306  
 <212> PRT  
 <213> B.fragilis

<400> 8010

Leu Leu Lys Ile Ile Thr Met Met Thr Lys Arg Asp Phe Val Pro Ser  
 1 5 10 15  
 Asn Ser Phe Gly Gln Tyr Val Ser Pro Tyr Arg Arg Leu Asp Asp Gln  
 20 25 30  
 Ile Ala Ile Phe His Phe Leu Cys Lys Phe Phe Pro Ala Asp Leu Val  
 35 40 45  
 Gln Glu Val Leu Val Trp Leu Gly Val Met Ala Thr Tyr Arg Phe Cys  
 50 55 60  
 Cys Asn Gly Lys Phe Gly Ala Leu Phe Lys Phe Val Asp Tyr Ser Asp  
 65 70 75 80  
 Thr Ile Arg Arg Val Gln Glu Val Cys Leu Asp Pro Glu Thr Gly Arg  
 85 90 95  
 Ile Leu Gln Ser Gly Asp Ala Arg Ala Gln Ile Ala Asn Thr Leu Arg  
 100 105 110  
 Pro Asn Ala Thr Tyr Ser Cys Met Pro Glu Gly Tyr Lys Ala Cys Met  
 115 120 125  
 Ile Glu Lys Glu Leu Met Asn Ser Lys Ser Glu Val Val Tyr Asp Cys  
 130 135 140  
 Lys Pro Cys Phe Phe Gly Gln Ala Gln Cys Phe Glu His Ala Arg Tyr  
 145 150 155 160  
 Asp Arg Pro Tyr Gly Ile Val Lys His Val Val Ser Ala Ile Phe Leu  
 165 170 175  
 Asn Ile Cys Gly Tyr Lys Asp Lys Asn Ser Pro Val Trp Leu Ala Thr  
 180 185 190  
 Gly Gly Ser Glu Leu Thr Gly Cys Asp Leu Ser Lys Ala Asp Ile Leu  
 195 200 205  
 Lys Phe Phe Gln Phe Lys Glu Met Ile Leu Phe Pro Gly Ala Glu Leu  
 210 215 220  
 Tyr Asp Gln Ser Lys Glu Ile Glu Gln Gln Ile Arg Leu Met Gly Met  
 225 230 235 240  
 Lys Ala Arg Thr Ser Tyr Phe Met Glu Lys Val Glu Tyr Lys Asp Lys  
 245 250 255  
 Gln Arg Gly Asp Asp Ile Ser Asn Tyr Ile Ile Ser Glu Ile Asn Arg  
 260 265 270  
 Gly Val His Tyr Lys Glu Ala Tyr Glu Ser Ala Leu Asp Arg Gly Ala  
 275 280 285  
 Leu Ala Leu Asp Trp Gly Ser Ala Met Val Asp Asn Asn Arg Met Met  
 290 295 300  
 Lys Glu  
 305

<210> 8011  
 <211> 99

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8011

Pro Met Lys Ile Tyr Ile Ser Gly Gln Ile Thr Gly Leu Glu Glu Glu  
 1 5 10 15  
 Lys Ala Lys Arg Tyr Phe Asp Lys Ala Glu Glu Ile Leu Leu Glu Lys  
 20 25 30  
 Gly Tyr Gly Pro Val Asn Pro Met Ser Val Asn Pro Pro Met Glu Asn  
 35 40 45  
 Lys Ser Trp Lys Asp Tyr Met Ile Asp Asp Leu Lys Leu Leu Phe Asp  
 50 55 60  
 Cys Glu Ala Ile Tyr Leu Ile Asp Asn Trp Gln Ser Ser Lys Gly Ala  
 65 70 75 80  
 Arg Ile Glu Cys Tyr Ile Ala Lys Glu Leu Gly Met Arg Ile Leu Glu  
 85 90 95  
 Asn Ile Glu

&lt;210&gt; 8012

&lt;211&gt; 574

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8012

Ile Gly Lys Ile Gly Pro Gly Asn Val Lys Asn Lys Ser Ile Met Lys  
 1 5 10 15  
 Lys Ser Phe Leu Ile Ile Leu Cys Leu Ala Leu Leu Ser Cys Val Thr  
 20 25 30  
 Gly Cys Lys Asp Ser Thr Gln Thr Leu Leu Lys Lys Ser Val Glu Met  
 35 40 45  
 Glu Gly Ile Ser Thr Asp Ser Met Leu Phe Tyr Leu Gln Gln Ile Gln  
 50 55 60  
 Ser Pro Asn His Leu Asn Asp Lys Gln Arg Ala Glu Tyr Cys Phe Gln  
 65 70 75 80  
 Leu Tyr Lys Ala Thr Leu Trp Lys Thr Gln Lys Pro Lys Asp Ser Leu  
 85 90 95  
 Leu Lys Val Cys Ile Pro Leu Phe Leu His Val Gly Asp Thr Ala Gln  
 100 105 110  
 Trp Leu Gln Ala Gln Leu Glu Gln Ala Asn Ser Phe Phe Tyr Lys Asp  
 115 120 125  
 Gln Pro Asp Ser Ile Leu His Ser Ala Arg Glu Leu Arg Asp Lys Thr  
 130 135 140  
 Lys Tyr Met Thr Pro Thr Gln Gln Arg Tyr Tyr Tyr Asn Ile Gln Lys  
 145 150 155 160  
 Phe Thr Tyr Phe Asn Gln Lys Lys Tyr Pro Glu Ala Leu Lys Leu Ala  
 165 170 175  
 Asn Lys Val Leu Ala Leu Asn Asn Pro Ser Asn Asp Thr Leu Ser Leu  
 180 185 190  
 Phe Tyr Asp His Arg Thr Gln Leu Glu Ile Leu Arg Lys Met Gly Lys  
 195 200 205  
 Thr Asp Glu Val Ile Glu Gly Tyr Tyr Lys Met Leu Glu Trp Phe Ala  
 210 215 220  
 Pro Ser Lys Glu Tyr His Tyr Leu Thr Tyr Thr Ile Ala Glu Asp Ile  
 225 230 235 240  
 Val Asn Tyr Tyr Leu Gly Gln Gln Asp Phe Asp Lys Ala Leu Glu Ser  
 245 250 255  
 Val Gln Asn Leu Arg Leu Tyr Arg Arg Asn Arg Tyr Asp Ile Pro Tyr  
 260 265 270

Tyr Gln Leu Ile Arg Gly Gln Ile Phe Gln Ser Leu His Gln Leu Asp  
 275 280 285  
 Ser Ala Gly Tyr Tyr Tyr Lys Gln Ala Ala Thr Ser Thr Ser Pro Tyr  
 290 295 300  
 Ile Ala Ile Glu Ala Thr Ser Arg Leu Tyr Gln Leu Thr Asn Ala Thr  
 305 310 315 320  
 Gln Gln Pro Glu Gln Ala Tyr Tyr Leu Ala Lys Thr Glu Asp Ile Leu  
 325 330 335  
 Tyr Lys Asp Leu Thr Ser Asn Leu Lys Ala Lys Glu Thr Thr Arg Lys  
 340 345 350  
 Tyr Asn Glu Val Lys Leu Gln Asn Glu Leu Tyr Gln Leu Arg Leu Thr  
 355 360 365  
 Gln Gln Glu Lys Glu Leu Trp Met Met Gly Ile Ala Val Ile Leu Leu  
 370 375 380  
 Leu Ile Ala Leu Leu Ile Leu Phe Phe Tyr His Gln Glu Lys Lys Lys  
 385 390 395 400  
 Arg Leu Val Ser Glu Arg Arg Leu Gln Ala Glu Gln Ala Gly Glu Glu  
 405 410 415  
 Ala Arg Arg Leu Gln His Glu Asn Glu Leu Leu His Lys Glu Ala Glu  
 420 425 430  
 Leu Ser Ala Leu Arg Glu Lys Glu Ile Ile Met Arg Asn Lys Glu Ser  
 435 440 445  
 Glu Met Arg Glu Ala Leu Phe Arg His Ile Ser Phe Phe Gln Lys Leu  
 450 455 460  
 Pro Ser Leu His Ile Glu Asn Ser Thr Asp Asp Asn Pro Asn Arg Lys  
 465 470 475 480  
 Lys Ile Thr Val Ser Asp Ala Glu Trp Cys Glu Val Lys Gln Ala Val  
 485 490 495  
 Asn Asp Ala Phe Asn Asn Phe Val Asp Arg Leu Gln Glu Asp Tyr Pro  
 500 505 510  
 Gln Leu Asn Glu Lys Asp Ile Cys Phe Cys Cys Leu Val Lys Ile Asn  
 515 520 525  
 Val Asn Ile Gln Asp Leu Ser Asp Ile Tyr Cys Val Ser Lys Ala Ala  
 530 535 540  
 Ile Thr Lys Arg Lys Tyr Arg Ile Lys Thr Glu Lys Met His Ile Ser  
 545 550 555 560  
 Asp Glu Thr Leu Ser Leu Asp Ala Ile Leu Gln Asn Phe Gly  
 565 570

&lt;210&gt; 8013

&lt;211&gt; 320

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8013

Lys Lys Glu Met Lys Leu Glu Glu Lys Thr Lys Lys Lys Asp Glu Gln  
 1 5 10 15  
 Gly Leu Ile Ile Lys Lys Tyr Gln Gln Tyr Leu Lys Leu Glu Lys Ser  
 20 25 30  
 Leu Ser Lys Asn Thr Leu Glu Ala Tyr Leu Thr Asp Leu Glu Lys Leu  
 35 40 45  
 Leu Ser Phe Leu Ser Ala Glu Gly Val Glu Ile Leu Glu Val Ser Leu  
 50 55 60  
 Thr Asp Leu Gln Arg Phe Ala Ala Gly Leu His Asp Ile Gly Ile His  
 65 70 75 80  
 Ala Arg Ser Gln Ala Arg Ile Ile Ser Gly Ile Lys Ser Phe Phe His  
 85 90 95  
 Phe Leu Ile Ile Ala Asp Tyr Ile Glu Ala Asp Pro Ser Glu Leu Leu  
 100 105 110

Glu Gly Pro Lys Ile Gly Phe Lys Leu Pro Glu Val Leu Thr Val Glu  
 115 120 125  
 Glu Ile Asp Arg Ile Ile Ser Thr Ile Asp Leu Ser Lys Asn Glu Gly  
 130 135 140  
 Gln Arg Asn Arg Ala Ile Leu Glu Thr Leu Tyr Ser Cys Gly Leu Arg  
 145 150 155 160  
 Val Ser Glu Leu Thr Gly Leu Lys Leu Ser Asp Leu Tyr Phe Asp Glu  
 165 170 175  
 Gly Phe Ile Lys Val Glu Gly Lys Gly Ser Lys Gln Arg Leu Val Pro  
 180 185 190  
 Ile Ser Pro Lys Ala Ile Gln Glu Ile Lys Leu Tyr Phe Leu Asp Arg  
 195 200 205  
 Asn Arg Ile Asn Ile Lys Lys Asp His Glu Asp Tyr Leu Phe Leu Ser  
 210 215 220  
 Arg Arg Gly Thr His Leu Ser Arg Ile Met Ile Phe His Leu Ile Lys  
 225 230 235 240  
 Glu Leu Ala Asp Met Ala Gly Ile Thr Lys Asn Ile Ser Pro His Thr  
 245 250 255  
 Phe Arg His Ser Phe Ala Thr His Leu Leu Glu Gly Gly Ala Asn Leu  
 260 265 270  
 Arg Ala Ile Gln Cys Met Leu Gly His Glu Ser Ile Ser Thr Thr Glu  
 275 280 285  
 Ile Tyr Thr His Ile Asp Arg Asn Met Leu Arg Ser Glu Ile Ile Glu  
 290 295 300  
 His His Pro Arg Asn Ile Lys Tyr Arg Gln Glu Lys Lys Pro Phe Arg  
 305 310 315 320

<210> 8014

<211> 417

<212> PRT

<213> B.fragilis

<400> 8014

Leu Glu Arg Ile Arg Gln Lys Val Ser Lys Phe Thr Ser Glu Asn Asn  
 1 5 10 15  
 Thr Val Met Lys Val Leu Tyr Thr Phe Gly Gly Met Pro His Tyr Leu  
 20 25 30  
 Asn Ala Met Leu Asn Lys Leu His Asn Lys Gly Val Glu Ile Thr Val  
 35 40 45  
 Ile Thr Pro Gln Lys Gly Asn Ala Thr Ile Gly Lys Gly Val Lys Met  
 50 55 60  
 Val Glu Gly Gly Thr Tyr Arg His Leu Thr Ala Ile Glu Lys Lys Ala  
 65 70 75 80  
 Phe Tyr Gly Lys Ser Ser Tyr Pro Ser Leu Pro Glu Ile Val Arg Glu  
 85 90 95  
 Glu Lys Pro Asp Ile Leu Ile Met Gly Trp Pro Tyr Phe Leu Gln Val  
 100 105 110  
 Phe Phe Gln Pro Arg Leu Arg Lys Ala Met Lys Glu Cys Arg Thr Arg  
 115 120 125  
 Leu Val Ile Arg Glu Ile Pro Phe Gln Thr Pro Pro Tyr Gly Lys Ile  
 130 135 140  
 Lys Glu Tyr Phe His Glu Asn Pro Met Tyr Asp Glu Asn Met Arg Leu  
 145 150 155 160  
 Val Ser Thr Gly Thr Gly Phe Tyr Leu Lys Gln Trp Leu Thr Ala Lys  
 165 170 175  
 Ile Arg Lys Tyr Cys Tyr Ala Arg Ile Thr Gly Thr Leu Asn Tyr Ser  
 180 185 190  
 Thr Ala Ala Tyr Asp Ile Leu Pro Ser Tyr Gly Val Lys Gln Glu Gln  
 195 200 205

Ile His Val Thr Tyr Asn Ser Thr Asp Thr Asp Ala Leu Leu Lys Glu  
 210 215 220  
 Lys Glu Ala Val Leu Thr Ser Pro Pro Leu Leu Pro Pro Ser Ser Lys  
 225 230 235 240  
 Arg Ala Leu His Ile Gly Arg Leu Val Lys Trp Lys Arg Val Asp Leu  
 245 250 255  
 Leu Ile Asp Ala Phe Thr Lys Val Ile Ala Ser His Pro Asp Ala Glu  
 260 265 270  
 Leu Val Val Val Gly Asp Gly Pro Glu Leu Asp Asn Leu Lys Lys Gln  
 275 280 285  
 Ala Ala Asp Leu Asn Leu Thr Glu Gln Val Arg Phe Ile Gly Ala Val  
 290 295 300  
 Tyr Ser Pro Lys Glu Leu Gly Ala Tyr Met Asn Glu Ser Thr Val Tyr  
 305 310 315 320  
 Val Leu Ala Gly Met Gly Gly Leu Ser Ile Asn Asp Ala Met Thr Tyr  
 325 330 335  
 Gly Leu Pro Val Val Cys Ser Val Cys Asp Ser Thr Glu Arg Asp Leu  
 340 345 350  
 Val Thr Asp Gly Val Asn Gly Leu Phe Phe Lys Glu Gly Asn Ala Asp  
 355 360 365  
 Ser Leu Ser Asp Lys Leu Asn Lys Leu Phe Ala Ser Pro Glu Arg Cys  
 370 375 380  
 Ala Ser Met Gly Arg Glu Ser Glu Arg Ile Ile Arg Glu Lys Ile Asn  
 385 390 395 400  
 Ile Glu Thr Val Ser Glu Arg Tyr Leu Gln Ala Phe Arg Thr Phe Met  
 405 410 415  
 Gln

&lt;210&gt; 8015

&lt;211&gt; 174

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8015

Thr Lys Arg Ile Met Ala Lys Glu Ser Val Lys Ile Leu Gln Gly Lys  
 1 5 10 15  
 Leu Asp Val Lys Ser Leu Ile Asp Gln Leu Asn Ala Ala Leu Ser Glu  
 20 25 30  
 Glu Trp Leu Ala Tyr Tyr Gln Tyr Trp Val Gly Ala Leu Val Val Glu  
 35 40 45  
 Gly Ala Met Arg Ala Asp Val Gln Gly Glu Phe Glu Glu His Ala Glu  
 50 55 60  
 Glu Glu Arg His His Ala Gln Leu Ile Ala Asp Arg Ile Ile Glu Leu  
 65 70 75 80  
 Glu Gly Val Pro Val Leu Asp Pro Lys Lys Trp Phe Glu Leu Ala Arg  
 85 90 95  
 Cys Lys Tyr Asp Ser Pro Thr Ala Phe Asp Ser Val Ser Leu Leu Asn  
 100 105 110  
 Gln Asn Val Ser Ser Glu Arg Cys Ala Ile Leu Arg Tyr Gln Glu Ile  
 115 120 125  
 Ala Asn Phe Thr Asn Gly Lys Asp Tyr Thr Thr Cys Asp Ile Ala Lys  
 130 135 140  
 His Ile Leu Ala Glu Glu Glu His Glu Gln Asp Leu Gln Asp Tyr  
 145 150 155 160  
 Leu Thr Asp Ile Ala Arg Met Lys Glu Ser Phe Leu Lys Lys  
 165 170

&lt;210&gt; 8016

<211> 203  
 <212> PRT  
 <213> B.fragilis

<400> 8016

Ile	Ile	Thr	Phe	Tyr	Arg	Glu	Asn	Thr	Phe	Asn	Ile	Met	Asp	Thr	Ser
1				5					10					15	
Lys	Ile	Val	Gly	Glu	Lys	Ile	Lys	Ser	Leu	Arg	Glu	Asn	Lys	Gly	Ile
			20					25					30		
Ser	Ile	Glu	Glu	Leu	Ala	Glu	Arg	Ser	Gly	Leu	Ala	Ile	Glu	Gln	Ile
			35				40					45			
Glu	Arg	Ile	Glu	Asn	Asn	Ile	Asp	Leu	Pro	Ser	Leu	Ala	Pro	Leu	Ile
			50			55					60				
Lys	Ile	Ala	Arg	Val	Leu	Gly	Val	Arg	Leu	Gly	Thr	Phe	Leu	Asp	Asp
65					70				75					80	
Gln	Asp	Glu	Thr	Gly	Pro	Val	Val	Ser	Arg	Lys	Met	Glu	Ala	Thr	Asp
				85				90						95	
Thr	Ile	Ser	Phe	Ser	Asn	Asn	Ala	Ile	His	Ser	Arg	Lys	His	Met	Gln
			100					105					110		
Tyr	His	Ser	Leu	Ser	Lys	Ser	Lys	Ala	Asp	Arg	His	Met	Glu	Pro	Phe
			115				120					125			
Ile	Ile	Asp	Val	Ala	Pro	Thr	Gln	Asp	Ser	Asp	Phe	Val	Leu	Ser	Ser
			130				135				140				
His	Glu	Gly	Glu	Glu	Phe	Ile	Met	Val	Met	Glu	Gly	Val	Met	Glu	Ile
145					150					155				160	
Ser	Tyr	Gly	Lys	Ser	Thr	Tyr	Leu	Leu	Glu	Glu	Gly	Asp	Ser	Ile	Tyr
				165					170					175	
Tyr	Asp	Ser	Ile	Val	Pro	His	His	Val	His	Ala	Tyr	Glu	Gly	Gln	Ala
			180				185							190	
Ala	Lys	Ile	Leu	Ala	Val	Ile	Tyr	Thr	Pro	Ile					
			195				200								

<210> 8017  
 <211> 89  
 <212> PRT  
 <213> B.fragilis

<400> 8017

Cys	Phe	Leu	Met	Asn	Tyr	Ala	Ser	Ile	Leu	Val	Lys	Lys	Leu	Thr	Leu
1				5					10					15	
Ser	Arg	Met	Ser	Gln	Asn	Leu	Tyr	Val	Arg	Leu	Gly	Phe	Leu	Gly	Asn
			20					25				30			
Gln	Pro	Phe	Phe	Thr	Leu	Ser	Ser	Cys	Ser	Lys	Thr	Ser	Leu	Met	Val
			35				40					45			
Gln	Lys	Glu	Glu	Lys	Ala	Asn	Thr	Pro	Asn	Lys	Asp	Glu	Thr	Ser	Ile
			50			55					60				
Leu	Ser	Val	Leu	Asn	Glu	Ala	Ala	Thr	Pro	Ala	Ile	Pro	Asn	Ile	Arg
65					70				75					80	
Lys	Ile	His	Gln	His	Phe	Val	Pro	Gln							
				85											

<210> 8018  
 <211> 338  
 <212> PRT  
 <213> B.fragilis

<400> 8018

Lys	Pro	Met	Ile	Val	Met	Asn	Asn	Phe	Leu	Val	Phe	Asp	Thr	Ile	Lys
1				5					10					15	

Ile Val Thr Cys Gly Thr Tyr Leu Lys Ile Ser Asp Lys Ser Val Phe  
 20 25 30  
 Thr Thr Asp Val Asp Leu Leu Asp Gly Arg Thr Ile Lys Ser Val Thr  
 35 40 45  
 Phe Asn Ser Gln Arg Asn Arg Ser Ile Val Pro Phe Glu Leu Tyr Ile  
 50 55 60  
 His Ala Asn Leu Leu Ser Asn Lys Met Cys Ile Glu Phe Ser Ser Lys  
 65 70 75 80  
 Ile Leu Trp Glu Asp Tyr Pro Lys Leu Ile Ser Ser Glu Thr Phe Ala  
 85 90 95  
 Gln Cys Leu Arg Asn Ile Glu Lys Thr Gly Ile Cys Thr Leu Asp Ile  
 100 105 110  
 Asp Arg Ile Met Glu Asp Cys Tyr Val Thr Lys Leu His Val Thr Lys  
 115 120 125  
 Asp Ile Glu Leu Glu Leu Thr Pro Ala Ile Leu Asn Cys Leu Asn Leu  
 130 135 140  
 Cys Thr Gly Asn Phe Arg Arg Tyr Asn Trp Glu Arg Tyr Lys Thr Ala  
 145 150 155 160  
 Ile Leu Phe Ser Lys Asn Val Lys Ser Ser Asn Ser Lys Glu Ala Ile  
 165 170 175  
 Ser Ile Tyr Asp Lys Gly Ile Glu Ile Val Gln Thr Lys Asn Lys Gly  
 180 185 190  
 Phe Leu Gly Leu Val Glu Asn Ala Asp Lys Ile Val Glu Tyr Phe Ala  
 195 200 205  
 Gly Lys Thr Arg Phe Glu Val Lys Tyr Glu Asn Met Ser Lys Ile Lys  
 210 215 220  
 Lys Glu Leu Gly Ile Lys Asp Thr Ser Leu Lys Ser Val Phe Gly Val  
 225 230 235 240  
 Lys Lys Asn Ile Val Leu Thr Gln Phe Asp Lys Ile Phe Thr Glu Arg  
 245 250 255  
 Thr Ile Ser Thr Asp Val Arg Ile Glu Thr Phe Ser Glu Tyr Gly Ile  
 260 265 270  
 Trp Asn Ile Val Cys Asn His Asn Gly Asp Leu Lys Ala Ile Glu Gln  
 275 280 285  
 Glu Ile Lys Asp Leu Gly Ile Tyr Ala Lys Gly Ser Arg Ala Val Leu  
 290 295 300  
 Gly Arg Thr Met Lys Lys Ile Lys Glu Ile Ala Gln Ile Trp Gly Asn  
 305 310 315 320  
 Arg Glu Met Lys Thr Asp Val Val Leu Glu Lys Ile Arg Leu Leu Leu  
 325 330 335  
 Arg Gly

&lt;210&gt; 8019

&lt;211&gt; 560

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8019

Ser Ala Met Ile Ala Leu His Ile Thr Lys Asn Met Gln Leu Tyr Glu  
 1 5 10 15  
 Arg Thr Leu Gly Gln Trp Leu Glu His Trp Ala Glu Thr Thr Pro Asp  
 20 25 30  
 Lys Glu Tyr Ile Val Tyr Ser Asp Arg Asn Leu Arg Phe Thr Trp Lys  
 35 40 45  
 Gln Phe Asn Lys Arg Val Asp Asp Met Ala Lys Gly Leu Ile Ala Ile  
 50 55 60  
 Gly Val Glu Arg Gly Thr His Val Gly Ile Trp Ala Ala Asn Val Pro  
 65 70 75 80



Asp Trp Leu Thr Leu Leu Tyr Ala Cys Ala Lys Ile Gly Ala Val Tyr  
 85 90 95  
 Val Thr Val Asn Thr Asn Tyr Lys Gln Ala Glu Leu Glu Tyr Leu Cys  
 100 105 110  
 Glu Asn Ser Asp Met His Thr Leu Cys Ile Val Asn Gly Glu Lys Asp  
 115 120 125  
 Ser Asp Phe Val Gln Met Thr Tyr Thr Met Leu Pro Glu Leu Lys Thr  
 130 135 140  
 Cys Glu Arg Gly His Leu Lys Ser Glu Arg Phe Pro Tyr Met Lys Asn  
 145 150 155 160  
 Val Ile Tyr Val Gly Gln Glu Lys His Arg Gly Met Tyr Asn Thr Gln  
 165 170 175  
 Glu Ile Leu Leu Leu Gly Asp Asn Ile Glu Asp Thr Glu Leu Asn Glu  
 180 185 190  
 Leu Lys Ser Gln Val Asp Cys His Asp Val Val Asn Met Gln Tyr Thr  
 195 200 205  
 Ser Gly Thr Thr Gly Phe Pro Lys Gly Val Met Leu Thr His Tyr Asn  
 210 215 220  
 Ile Ser Asn Asn Gly Phe Leu Thr Gly Glu His Met Lys Phe Thr Gly  
 225 230 235 240  
 Asn Asp Lys Leu Cys Cys Cys Val Pro Leu Phe His Cys Phe Gly Val  
 245 250 255  
 Val Leu Ala Thr Met Asn Cys Leu Thr His Gly Cys Thr Gln Val Met  
 260 265 270  
 Val Glu Arg Phe Asp Pro Leu Ile Val Leu Ala Ser Ile His Lys Glu  
 275 280 285  
 Lys Cys Thr Ala Leu Tyr Gly Val Pro Thr Met Phe Ile Ala Glu Leu  
 290 295 300  
 Asn His Pro Met Phe Asp Met Phe Asp Met Ser Ser Leu Arg Thr Gly  
 305 310 315 320  
 Ile Met Ala Gly Ser Leu Cys Pro Val Glu Leu Met Lys Gln Val Glu  
 325 330 335  
 Glu Lys Met Tyr Met Lys Val Thr Ser Val Tyr Gly Leu Thr Glu Ala  
 340 345 350  
 Ala Pro Gly Met Thr Ala Thr Arg Ile Asp Asp Pro Phe Asp Val Arg  
 355 360 365  
 Cys Asn Thr Val Gly Arg Asp Phe Glu Phe Thr Glu Val Lys Val Leu  
 370 375 380  
 Asn Pro Glu Thr Gly Glu Glu Cys Pro Val Gly Val Gln Gly Glu Met  
 385 390 395 400  
 Cys Asn Arg Gly Tyr Asn Thr Met Lys Gly Tyr Tyr Lys Asn Pro Gln  
 405 410 415  
 Ala Thr Ala Glu Val Ile Asp Lys Asn Asn Phe Leu His Ser Gly Asp  
 420 425 430  
 Leu Gly Ile Lys Asp Glu Asp Gly Asn Tyr Arg Ile Thr Gly Arg Ile  
 435 440 445  
 Lys Asp Met Ile Ile Arg Gly Gly Glu Asn Ile Tyr Pro Arg Glu Ile  
 450 455 460  
 Glu Glu Phe Leu Tyr Lys Leu Asp Gly Val Lys Asp Val Gln Val Ser  
 465 470 475 480  
 Gly Ile Pro Ser Lys Lys Tyr Gly Glu Ala Val Gly Ala Phe Ile Ile  
 485 490 495  
 Leu His Glu Gly Val Thr Met Gln Ala Ser Asp Val Gln Asp Phe Cys  
 500 505 510  
 Arg Asn Lys Ile Ser Arg Tyr Lys Ile Pro Lys Tyr Ile Phe Phe Ile  
 515 520 525  
 Asp Glu Phe Pro Met Thr Gly Ser Gly Lys Ile Gln Lys Phe Lys Leu  
 530 535 540  
 Lys Asp Leu Gly Leu Lys Leu Cys Glu Glu Gln Gly Ile Gln Ile Ile

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

545

550

555

560

<210> 8020  
 <211> 83  
 <212> PRT  
 <213> B.fragilis

<400> 8020  
 Lys Gln Lys Ile Ser Pro Asp Ile Val Ile Ser Ser Lys Ser Ser Ala  
 1 5 10 15  
 Cys Val Ser Asn His Leu Leu Arg Thr Lys Phe Lys Ser Arg Phe Leu  
 20 25 30  
 Ser Met Glu Glu Thr Ala Phe Ile Phe Tyr Leu Ser Pro Leu Leu Gly  
 35 40 45  
 Tyr Lys Ile Ser Leu Ile Leu Gln Gln Asn Glu Leu Asn Tyr Asn Leu  
 50 55 60  
 Leu Pro Gly Lys Tyr Ile Gln His Tyr Gly Tyr Lys Gln Asn Arg Arg  
 65 70 75 80  
 Arg Lys Asn

<210> 8021  
 <211> 348  
 <212> PRT  
 <213> B.fragilis

<400> 8021  
 Asp Met Lys Ile Ser Val Leu Leu Ala Ala Leu Leu Leu Leu Phe Ser  
 1 5 10 15  
 Cys Thr Asp Lys Asp Ser Lys Gln Ser Gln Asp Leu Ile Val Lys Thr  
 20 25 30  
 Ala Gln Ala Val Ser Ala Ser Gly Ile Lys Thr Thr Glu Phe Pro Phe  
 35 40 45  
 Ile Ala Gln Pro Phe Arg Thr Ser Glu Leu Ser Phe Arg Val Gly Gly  
 50 55 60  
 Pro Ile Asp Arg Leu Asp Val Tyr Ala Gly Asn His Tyr Lys Gln Gly  
 65 70 75 80  
 Ser Ile Ile Ala Glu Ile Asp Pro Arg Asp Phe His Ile Arg Lys Glu  
 85 90 95  
 Arg Ala Glu Ala Ile Tyr His Gln Ala Lys Ala Glu Phe Glu Arg Ile  
 100 105 110  
 Glu Lys Leu Tyr Glu Lys Asn Asn Val Ser Ala Ser Thr Tyr Glu Lys  
 115 120 125  
 Thr Lys Ala Asp Tyr Thr Thr Ala Lys Thr Ala Phe Asp Thr Ala Ser  
 130 135 140  
 Asn Glu Leu Gly Asp Thr Arg Leu Thr Ala Pro Phe Asp Gly Tyr Val  
 145 150 155 160  
 Gly Glu Val Tyr Ile Glu Lys Tyr Gln Asp Val Lys Pro Ala Gln Pro  
 165 170 175  
 Val Ile Ser Phe Ile Asp Ile Asn Arg Leu Lys Ile Glu Ile Tyr Val  
 180 185 190  
 Thr Gln Asn Ile Ala Phe Ala Ser His Pro Thr Asp Ser Val Arg Ile  
 195 200 205  
 Tyr Phe Asp Ala Gln Pro Asp Lys Tyr Tyr Lys Ala Gln Ile Val Glu  
 210 215 220  
 Val Ser Lys Gly Thr Thr Arg Asn Asn Leu Ser Tyr Leu Leu Thr Ala  
 225 230 235 240  
 Val Leu Pro Asn Lys Glu Gly Lys Leu Leu Ala Gly Met Ser Gly Lys  
 245 250 255

Ala Ile Phe Asp Ala Pro Gly Thr Thr Asp Leu Thr Gly Val Ser Ile  
                   260                  265                  270  
 Pro Gln Thr Ala Leu Cys Tyr Arg Pro Ser Glu Gly Glu Tyr Val Trp  
                   275                  280                  285  
 Val Ile Asp Thr Asn Thr Arg Gln Val Asn Arg Arg Thr Val Lys Lys  
                   290                  295                  300  
 Gly Asn Leu Leu Pro Gly Gly Tyr Val Thr Ile Thr Glu Gly Leu Arg  
 305                  310                  315                  320  
 Ala Ser Glu Thr Val Ala Thr Ser Gly Leu Arg Phe Leu Ser Asp Gly  
                   325                  330                  335  
 Met Lys Val Glu Ile Ser Thr Lys Thr Asn Ser Leu  
                   340                  345

<210> 8022  
 <211> 95  
 <212> PRT  
 <213> B.fragilis

<400> 8022  
 Pro Tyr Arg Met Val Pro Ala Asp Ser Arg Arg Ile Pro Arg Ala Pro  
 1                  5                  10                  15  
 Arg Tyr Ser Gly Tyr His Tyr Ala Ser Val Thr Leu Glu Tyr Arg Ala  
                   20                  25                  30  
 Ile Thr Val Tyr Gly Thr Thr Phe Gln Ser Phe Leu Leu Asn Asn Cys  
                   35                  40                  45  
 Leu Ala Arg Ala Trp Ser Tyr Asn Pro Thr His Ala Val Thr Trp Val  
                   50                  55                  60  
 Val Trp Ala Asn Pro Arg Ser Leu Ala Thr Thr Arg Gly Ile Ile Ile  
 65                  70                  75                  80  
 Tyr Phe Leu Phe Leu Gln Val Leu Arg Cys Phe Ser Ser Leu Arg  
                   85                  90                  95

<210> 8023  
 <211> 96  
 <212> PRT  
 <213> B.fragilis

<400> 8023  
 Asp Lys Asn Leu Gln Gly Phe Phe Phe Leu Gly Ala Gln Ala Gly Ala  
 1                  5                  10                  15  
 His Ser Asp Ile Leu Ala Leu Leu Pro His Ile Gln His Phe Ile Tyr  
                   20                  25                  30  
 Arg Phe Cys Tyr Tyr Phe Cys Arg Arg Asn Lys Leu Tyr Gln Tyr Ala  
                   35                  40                  45  
 Pro Thr Gln Met Tyr Ile Ser Cys Val Leu Gly Ser Asp Gly Ala Thr  
                   50                  55                  60  
 Thr Thr Gln Gln Arg Glu Gly Ala Ile Ala Leu Leu Tyr Ser Thr Pro  
 65                  70                  75                  80  
 Thr Leu Ile Glu Gln Gln Ala Cys His Lys Ile Ala Ile Phe Phe Thr  
                   85                  90                  95

<210> 8024  
 <211> 143  
 <212> PRT  
 <213> B.fragilis

<400> 8024  
 Gln Asp Cys Val Met Arg Ile Gln Ile Ile Asn Gly Pro Asn Ile Asn  
 1                  5                  10                  15

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Leu Leu Gly Lys Arg Glu Pro Ser Ile Tyr Gly Ser Val Thr Phe Glu
    20                      25                      30
Glu Tyr Leu Ala Glu Leu Arg Lys Lys Tyr Pro Asp Val Glu Leu Gly
    35                      40                      45
Tyr Phe Gln Ser Asn Val Glu Gly Glu Ile Ile Asp Ile Ile Gln Gln
    50                      55                      60
Thr Gly Phe Asp Val Asp Gly Ile Ile Leu Asn Ala Gly Ala Tyr Thr
    65                      70                      75                      80
His Thr Ser Ile Ala Leu Gln Asp Ala Ile Arg Ser Val Thr Ser Pro
    85                      90                      95
Val Ile Glu Val His Ile Ser Asn Val His Ala Arg Glu Gln Phe Arg
    100                     105                     110
His Val Ser Met Ile Ala Cys Ala Cys Lys Gly Val Ile Cys Gly Phe
    115                     120                     125
Gly Leu Asn Ser Tyr Arg Leu Ala Leu Glu Ala Leu Leu Asp Lys
    130                     135                     140

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<210> 8025  
 <211> 117  
 <212> PRT  
 <213> B.fragilis

<400> 8025

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Asn Asn Tyr Val Glu Lys Phe Met Glu Thr Thr Arg Gln Asn Lys Ile
1                      5                      10                      15
Ser Arg Leu Leu Gln Lys Glu Leu Ser Glu Ile Phe Leu Leu Gln Thr
    20                      25                      30
Lys Ala Met Pro Gly Val Leu Val Ser Val Ser Ala Val Arg Ile Ser
    35                      40                      45
Pro Asp Met Ser Ile Ala Arg Val Tyr Leu Ser Ile Phe Pro Ser Glu
    50                      55                      60
Lys Ser Glu Glu Met Val Lys Asn Ile Asn Asn Asn Met Lys Ser Ile
    65                      70                      75                      80
Arg Phe Glu Leu Gly Thr Arg Val Arg His Gln Leu Arg Ile Ile Pro
    85                      90                      95
Glu Leu Lys Phe Phe Val Asp Asp Ser Leu Asp Tyr Ile Glu Lys Ile
    100                     105                     110
Asp Ala Leu Leu Lys
    115

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<210> 8026  
 <211> 587  
 <212> PRT  
 <213> B.fragilis

<220>

<221> UNSURE

<222> (498)

<223> Identity of amino acid sequences at the above locations are unknown.

<400> 8026

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Gln Ile Phe Phe Ile Ser Met Arg Leu His Val Leu Ser Leu Thr Cys
1                      5                      10                      15
Leu Leu Leu Thr Val Gly Gly Thr Gly Pro Val Ala Ala Gln Lys Pro
    20                      25                      30
Gln Asn Tyr Pro Tyr Gly Val Pro Ser Glu Pro Trp Glu Glu Ser Phe
    35                      40                      45
Gly Asn His Arg Ala Val Leu Gln Ile Glu Lys Pro Ala Gln Ile Ala
    50                      55                      60

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Asn	Leu	Asp	Phe	Gln	Trp	Arg	Arg	Pro	Asp	Lys	Asp	Ala	Gly	His	Arg
65					70					75					80
Arg	Phe	Leu	Ile	Ile	His	Ala	Ala	Thr	Gly	Asp	Thr	Ile	Arg	Asn	Ile
			85							90				95	
Arg	Arg	Ile	Glu	Val	Asn	Asp	Glu	His	Cys	Arg	Leu	Gln	Phe	Gly	Pro
			100					105					110		
Val	Glu	Gln	Lys	Gly	Thr	Tyr	Tyr	Phe	Tyr	Tyr	Leu	Pro	Tyr	Gln	Val
		115					120					125			
Gln	Lys	Gly	Tyr	Gly	Phe	Tyr	Ser	Gly	Gly	Tyr	Leu	Pro	Lys	Glu	Asn
	130					135					140				
Glu	Pro	Asp	Ala	Ala	Trp	Gln	Ala	Gln	Gly	Gly	Ser	Thr	Leu	Lys	Ser
145					150					155					160
Thr	Arg	Ala	Lys	Val	Val	Arg	Val	Glu	Ser	Arg	Gln	Ala	Phe	Asp	Ser
			165						170					175	
Phe	Tyr	Pro	Met	Glu	Val	Ala	Ala	Thr	Ala	Arg	Glu	Lys	Glu	Asn	Tyr
			180					185					190		
Ile	Asn	Arg	His	Lys	Ala	Ser	Leu	Tyr	Leu	Phe	Ala	Glu	Asp	Arg	Arg
	195						200					205			
Phe	Pro	Ile	Arg	Met	Arg	Ser	Asn	Leu	Pro	Thr	Lys	Trp	Leu	Ala	Asp
	210					215					220				
Lys	Gln	Gly	Lys	Leu	Phe	Arg	Gly	Glu	Ala	Ala	Pro	Asn	Glu	Tyr	Tyr
225					230					235					240
Thr	Phe	Gln	Ile	Gly	Leu	Trp	Ala	Ala	Val	Asn	Gln	Ala	Asp	Lys	Ile
			245						250					255	
Ala	Tyr	Arg	Ala	Ser	Ser	Leu	Lys	Cys	Gly	Arg	Glu	Ile	Ile	Pro	Ala
			260					265						270	
Thr	Ala	Ile	Thr	Cys	Phe	Asn	Val	Glu	Gly	Thr	Asp	Pro	Tyr	Gly	Lys
		275				280						285			
Ala	Phe	Lys	Lys	Glu	Val	Asn	Val	Pro	Lys	Gly	Glu	Val	Gln	Ala	Leu
	290					295					300				
Trp	Phe	Gly	Ile	Asp	Ile	Pro	Asp	Gly	Gln	Lys	Glu	Gly	Ile	Tyr	Thr
305					310					315					320
Gly	Thr	Ile	Thr	Leu	Ser	Asp	Ala	Asp	Gly	Ala	Gln	Ser	Ser	Ile	Pro
			325						330					335	
Leu	Ser	Ile	Arg	Ile	Ala	Gly	Lys	Ala	Leu	Pro	Asp	Arg	Gly	Asp	Ser
		340					345						350		
Glu	Leu	Trp	Arg	Cys	Ser	Arg	Leu	Arg	Trp	Leu	Asn	Ser	Thr	Leu	Gly
		355					360					365			
Ile	Ala	Asp	Thr	Pro	Thr	Ala	Pro	Tyr	Thr	Ala	Met	Thr	Val	Asn	Glu
	370					375					380				
Asn	Arg	Ile	Gly	Cys	Leu	Gly	Arg	Ser	Ile	Thr	Ile	Asp	Glu	Gly	Thr
385					390					395					400
Gly	Leu	Pro	Ala	Gln	Ile	Arg	Ser	Trp	Asn	Asn	Asp	Val	Leu	Ser	Ser
			405						410					415	
Pro	Ile	Glu	Phe	Val	Ile	Gln	Thr	Ala	Gly	Gly	Val	Lys	Ser	Leu	Lys
		420						425					430		
Ala	Val	Pro	Glu	Leu	Thr	Glu	Arg	Thr	Glu	Gly	His	Val	Ala	Gly	Asn
		435					440					445			
Trp	Lys	Ala	Glu	Asp	Glu	Asp	Met	Thr	Val	Ser	Cys	Lys	Ala	Ile	Met
	450					455					460				
Glu	Phe	Asp	Gly	Trp	Ile	Asn	Tyr	Ile	Tyr	Thr	Ile	Thr	Pro	Lys	Lys
465					470					475					480
Gln	Ile	Gln	Val	Lys	Asp	Val	Arg	Leu	Val	Leu	Pro	Val	Arg	Asn	Glu
			485						490					495	
Ile	Xaa	Thr	Tyr	Phe	Leu	Gly	Met	Gly	Leu	Pro	Gly	Gln	Pro	Thr	Pro
		500						505					510		
Gln	Gln	Tyr	Asp	Arg	Lys	Trp	Asp	Ala	Pro	Glu	Lys	Thr	Val	Asn	Thr
		515					520					525			
Phe	Gly	Val	Ser	Ile	Pro	Asn	Phe	Gln	Arg	Thr	Thr	Met	Gly	Cys	Gly

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530                      535                      540  
 Pro Ser Thr Ile Phe Trp Ile Gly Asn Gln His Ala Gly Ile His Trp  
 545                      550                      555                      560  
 Gln Ile Arg Gly Ser Thr Tyr Ser Arg Ser Ala Ile Glu Ser Ala Pro  
                     565                      570                      575  
 Ser Gly Leu Ser Gly Lys Leu Val Gln Arg Gly  
                     580                      585

<210> 8027  
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 <212> PRT  
 <213> B.fragilis

<400> 8027

Ile Thr Lys Val Arg Val Tyr Ser Gly Leu Tyr Glu Arg Arg Pro Asp  
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 Thr Pro Phe Ile Phe Thr Asn Gly Gln Glu Arg Lys Tyr Asn Met Ala  
                     20                      25                      30  
 Glu Gln Ser Leu Lys Glu Lys Thr Ala Lys Gly Leu Phe Trp Gly Gly  
                     35                      40                      45  
 Phe Ser Asn Gly Ile Gln Gln Leu Leu Asn Leu Leu Phe Gly Ile Ile  
 50                      55                      60  
 Ile Thr Arg Met Leu Asp Ser Thr Asp Tyr Gly Met Ile Gly Met Leu  
 65                      70                      75                      80  
 Ala Ile Phe Thr Ala Val Ala Asn Ser Ile Gln Glu Ser Gly Phe Thr  
                     85                      90                      95  
 Ala Ala Leu Ala Asn Lys Gln Thr Phe Arg His Glu Asp Tyr Asn Ala  
                     100                      105                      110  
 Val Phe Trp Phe Ser Phe Leu Met Gly Ala Ser Leu Tyr Leu Leu Leu  
                     115                      120                      125  
 Phe Phe Cys Ala Pro Phe Ile Ala Ala Phe Tyr Lys Thr Pro Gln Leu  
 130                      135                      140  
 Ile Pro Leu Ser Arg Phe Leu Phe Leu Gly Phe Leu Ile Ser Ser Cys  
 145                      150                      155                      160  
 Gly Thr Ala His Asn Ala Val Leu Phe Lys Lys Leu Met Val Lys Glu  
                     165                      170                      175  
 Lys Ala Lys Ala Thr Ile Thr Ala Leu Leu Cys Ser Gly Thr Ile Gly  
                     180                      185                      190  
 Ile Val Met Ala Tyr Asn Gly Met Ala Phe Trp Gly Leu Ala Val Gln  
 195                      200                      205  
 Gln Ile Thr Tyr Ile Phe Ile Ala Asn Ala Leu Leu Trp Tyr Phe Ser  
 210                      215                      220  
 Pro Trp Arg Pro Thr Phe Ser Phe Asn Phe Lys Pro Ile Arg Glu Met  
 225                      230                      235                      240  
 Leu Pro Phe Ser Ser Lys Leu Leu Ile Thr Asn Val Phe His Tyr Ile  
                     245                      250                      255  
 Asn Asp Asn Ile Phe Ser Val Leu Leu Gly Arg Phe Tyr Thr Ser Gln  
                     260                      265                      270  
 Asp Val Gly Tyr Tyr Thr Gln Ala Asn Lys Trp Thr Asn Met Gly Phe  
 275                      280                      285  
 Ser Leu Ile Ser Asn Met Ile Asn Gly Val Ser Gln Pro Val Leu Val  
 290                      295                      300  
 Glu Thr Ser Ser Asp Ala Met Arg Gln Lys Asn Ile Phe Arg Lys Met  
 305                      310                      315                      320  
 Leu Arg Phe Thr Ala Phe Ile Ser Phe Pro Ala Met Phe Gly Leu Ala  
                     325                      330                      335  
 Leu Ile Ala Asn Glu Phe Ile Val Ile Ala Val Thr Ala Lys Trp Gln  
                     340                      345                      350  
 Ala Cys Val Pro Ile Met Gln Ile Leu Cys Ile Trp Gly Ala Phe Val

355 360 365  
 Pro Ile Thr Tyr Met Tyr Ser Asn Leu Leu Ile Ser Lys Gly Lys Ser  
 370 375 380  
 Asn Leu Phe Met Trp Asn Thr Ile Ala Gln Ser Leu Val Gln Leu Thr  
 385 390 395 400  
 Met Leu Leu Cys Thr Ile Ser Gln Gly Ile Leu Val Met Ala Val Ile  
 405 410 415  
 Tyr Thr Val Ile Asn Ile Gly Trp Leu Leu Ile Trp His Tyr Phe Val  
 420 425 430  
 Asn Lys Gln Ile His Ile Thr Leu Trp Glu Val Met Lys Asp Ile Thr  
 435 440 445  
 Pro Tyr Leu Leu Ile Ser Gly Gly Val Ile  
 450 455

<210> 8028  
 <211> 439  
 <212> PRT  
 <213> B.fragilis

<400> 8028  
 Leu Cys Thr Val Ser His Arg Lys Pro Leu Phe Leu Pro Lys His Phe  
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 Asp Arg Met Arg Val Leu Ile Ile Asn Thr Ser Glu Arg Leu Gly Gly  
 20 25 30  
 Ala Ala Val Ala Ala Ser Arg Leu Met Glu Ser Leu Lys Asn Asn Gly  
 35 40 45  
 Ile Lys Ala Lys Met Leu Val Arg Asp Lys Gln Thr Asp Gln Ile Ser  
 50 55 60  
 Val Val Gly Leu Gln Arg Asn Trp Trp Gln Val Trp Arg Phe Val Trp  
 65 70 75 80  
 Glu Arg Ile Val Ile Trp Lys Ala Asn Arg Phe Lys Lys Asn Asn Leu  
 85 90 95  
 Phe Ala Val Asp Ile Ala Asn Thr Gly Thr Asp Ile Thr Ser Leu Pro  
 100 105 110  
 Glu Phe Gln Gln Ala Asp Val Ile His Leu His Trp Val Asn Gln Gly  
 115 120 125  
 Met Leu Ser Leu Asn Asp Ile Arg Lys Ile Leu Lys Ser Gly Lys Pro  
 130 135 140  
 Val Val Trp Thr Met His Asp Met Trp Pro Cys Thr Gly Ile Cys His  
 145 150 155 160  
 His Ala Arg Glu Cys Thr Asn Tyr His Gln Glu Cys Asn His Cys Pro  
 165 170 175  
 Tyr Leu Tyr Gly Gly Gly Ser Lys Lys Asp Leu Ser Asn Arg Ile Phe  
 180 185 190  
 Arg Lys Lys Gln Gln Leu Tyr Lys Glu Ala Pro Ile Thr Phe Ile Thr  
 195 200 205  
 Cys Ser Gln Trp Leu Lys Gly Gln Ala Glu Lys Ser Ala Leu Leu Thr  
 210 215 220  
 Gly Glu Thr Val Ile Ser Ile Pro Asn Pro Ile Asn Thr Asn Leu Phe  
 225 230 235 240  
 Lys Pro Arg Asn Lys Lys Glu Ala Arg Ser Lys Cys His Leu Pro Gln  
 245 250 255  
 Asn Gly Lys Leu Ile Leu Phe Gly Ser Ala Lys Ile Thr Asp Lys Arg  
 260 265 270  
 Lys Gly Ile Asp Tyr Leu Ile Glu Ser Cys Lys Leu Leu Ala Ala Lys  
 275 280 285  
 His Pro Glu Leu Lys Asp Ser Leu Ser Val Val Val Phe Gly Lys Gln  
 290 295 300  
 Ser Glu Gln Leu Lys Pro Leu Leu Pro Phe Lys Val Tyr Pro Leu Asn

305 310 315 320  
 Tyr Val Ser Asn Glu His Glu Leu Val Asp Val Tyr Asn Ala Val Asp  
 325 330 335  
 Leu Phe Val Thr Pro Ser Leu Glu Glu Asn Leu Pro Asn Thr Ile Met  
 340 345 350  
 Glu Ala Met Ala Cys Gly Val Pro Cys Ile Gly Phe Asn Val Gly Gly  
 355 360 365  
 Ile Pro Glu Met Ile Asp His Leu His Asn Gly Tyr Val Ala Gln Tyr  
 370 375 380  
 Lys Ser Ser Glu Asp Phe Ala Asn Gly Ile Tyr Trp Ala Leu Thr Asp  
 385 390 395 400  
 Pro Asp Tyr Pro Ser Leu Ser Glu Gln Ala Asn Arg Lys Val Ile Ala  
 405 410 415  
 Asn Tyr Ser Glu Gly Ile Ile Ala Lys Arg Tyr Ile Asp Val Tyr Asn  
 420 425 430  
 Lys Ile Thr Gly Arg Tyr Ala  
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 <212> PRT  
 <213> B.fragilis

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 Gln Pro Leu Phe Ile Arg Asp Glu Met Lys Glu Thr Asp Leu Leu Asp  
 1 5 10 15  
 Glu Tyr Ile Leu Gln His Ile Asp Glu Glu Gly Glu Tyr Leu Lys Ser  
 20 25 30  
 Leu Tyr Arg Asp Thr His Val Lys Leu Leu Arg Pro Arg Met Ala Ser  
 35 40 45  
 Gly His Leu Gln Gly Arg Met Leu Lys Met Phe Val Arg Met Ile Arg  
 50 55 60  
 Pro Arg Gln Ile Leu Glu Ile Gly Thr Tyr Ser Gly Tyr Ser Ala Leu  
 65 70 75 80  
 Cys Leu Ala Glu Gly Leu Glu Glu Gly Gly Met Leu His Thr Phe Glu  
 85 90 95  
 Ile Asn Asp Glu Gln Glu Asp Phe Thr Arg Pro Trp Leu Glu Asn Ser  
 100 105 110  
 Ala Tyr Ala Asp Lys Ile Lys Phe Tyr Ile Gly Asp Ala Leu Arg Leu  
 115 120 125  
 Ile Pro Ala Leu Gly Ile Thr Phe Asp Leu Ala Phe Val Asp Gly Asp  
 130 135 140  
 Lys Arg Lys Tyr Ile Glu Tyr Tyr Glu Met Thr Leu Ala His Leu Ser  
 145 150 155 160  
 Val Gly Gly Tyr Ile Ile Ala Asp Asn Thr Leu Trp Asp Gly His Val  
 165 170 175  
 Leu Glu Glu Pro His Ser Asn Asp His Gln Thr Ile Gly Ile Lys Ala  
 180 185 190  
 Phe Asn Glu Leu Val Ala His Asp Glu Arg Val Glu Lys Val Ile Leu  
 195 200 205  
 Pro Leu Arg Asp Gly Leu Thr Ile Ile Arg Lys Lys  
 210 215 220

<210> 8030  
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 <213> B.fragilis

<400> 8030



Gln Val Leu Leu Asp Ile Pro Val Ser Tyr Leu Phe Ile Ile Lys Ser  
 1 5 10 15  
 Asp Arg Phe Met Trp Trp Asn Tyr Met Lys Val Leu Met Phe Asn Thr  
 20 25 30  
 Leu Asn Pro Asn Asn Leu Phe Arg Gln Arg Pro Ser Gly Phe Asn Leu  
 35 40 45  
 Pro Met Ile Ile Leu Tyr Ile Lys Leu Asp Ser Gln Asn Ala Lys Ile  
 50 55 60  
 Asp Gln Lys Thr Leu Ile Gly His Leu Pro Ser Phe His Tyr Asp Phe  
 65 70 75 80  
 Trp Arg Leu

<210> 8031  
 <211> 101  
 <212> PRT  
 <213> B.fragilis

<400> 8031  
 Cys Gln Val Phe Ile Asn Pro Met Gln Phe Gly Pro Ile Asn Asp Ala  
 1 5 10 15  
 Pro Tyr Leu Leu Thr Val Ser Arg Met Arg Ser Ser Asn Lys Ala Pro  
 20 25 30  
 Ser Cys Val Ser Ser Pro Asn Pro Ala Glu Arg Ile Met Lys Ala Arg  
 35 40 45  
 Val Cys Phe Ser Ala Ala Ser Val Ser Thr Thr Ser Gly Gln Arg Thr  
 50 55 60  
 Ala Gly Ile Ala Arg Ile Ala Arg Ser Val Ser Gly Asn Ser Phe Ala  
 65 70 75 80  
 Ser Ala Lys Glu Gly Thr Pro Cys Thr Ser Val Ser Leu Gly Leu Thr  
 85 90 95  
 Ala Arg Ser Ser Pro  
 100

<210> 8032  
 <211> 329  
 <212> PRT  
 <213> B.fragilis

<400> 8032  
 Leu Gly Phe Leu Glu Arg Asn Ile Lys Asn Met Lys Ile Ser Asn Lys  
 1 5 10 15  
 Tyr Asp Arg Leu Val Arg Lys Leu Ile Ala Gly Glu Ser Ser Ser Glu  
 20 25 30  
 Glu Met Glu Glu Leu Ala His Trp Asn Val Val Glu Thr Lys Met Lys  
 35 40 45  
 Lys Gln Phe Asp Ala Ala Lys Asn Ile Val Glu Asn Gly Ala Ile Glu  
 50 55 60  
 Arg Arg Ile Trp Asp Lys Ile Asp Ser Arg Cys Gln Ala Pro Val Glu  
 65 70 75 80  
 Arg Ser Gln Lys Leu Gln Leu Arg Tyr Trp Arg Val Ala Leu Ala Ala  
 85 90 95  
 Cys Ile Thr Ala Leu Leu Ile Ile Gly Gly Gly Ile Phe Phe Asp  
 100 105 110  
 Lys Gly His Thr Ala Ser Gln Arg Ile Thr Glu Tyr Thr Glu Val Val  
 115 120 125  
 Ser Ser Asn Ser Arg Leu Tyr Ile Leu Pro Asp Ser Ser Lys Val Trp  
 130 135 140  
 Ile Gln Ala Gly Ser Arg Leu Arg Phe Ser Gln Asp Phe Met Ser Asn

145	Arg	Glu	Val	Trp	Leu	Glu	Gly	Val	Ser	Thr	Phe	Glu	Val	Thr	Lys	Arg	160
					165					170							175
	Lys	Gly	His	Asn	Phe	Lys	Val	Tyr	Ile	Asp	Gln	Ala	Phe	Val	Glu	Val	
			180						185								190
	Lys	Gly	Thr	Val	Phe	Arg	Val	Gln	Ser	Thr	Cys	Gln	Asp	Gly	Ala	Glu	
			195						200								205
	Val	Thr	Leu	Phe	Ser	Gly	Lys	Val	Asp	Phe	Asn	Val	Lys	Ala	Ser	Gln	
			210						215								220
	Arg	Lys	Val	Glu	Met	Lys	Pro	Leu	Gln	Gln	Ile	Val	Phe	His	Pro	Glu	
			225						230								240
	Lys	Asp	Glu	Val	Ile	Leu	Lys	Asn	Ile	Gly	Asn	Ile	Ser	Trp	Asp	Glu	
					245					250							255
	Gly	Arg	Tyr	Lys	Phe	Val	Asp	Met	Arg	Met	Asp	Asp	Leu	Ile	Glu	Ala	
			260						265								270
	Ile	His	Asp	Ile	Tyr	His	Ile	Pro	Val	Glu	Leu	Asp	Arg	Lys	Val	Ala	
			275						280								285
	Arg	Asn	Asp	Leu	Phe	Thr	Gly	Tyr	Met	Arg	Tyr	Asp	Asp	Pro	Ala	Ser	
			290						295								300
	Lys	Val	Ile	Glu	Lys	Ile	Cys	Ile	Asn	Met	Asn	Leu	Lys	Phe	Lys	Lys	
			305						310								320
	Glu	Thr	Gln	Lys	Ile	Ile	Ile	Tyr	Lys								
					325												

<210> 8033  
 <211> 90  
 <212> PRT  
 <213> B.fragilis

<400> 8033	Ile	Phe	Phe	Ser	Ser	Leu	Gln	Val	Gln	Lys	Gln	Cys	Phe	Met	Lys	Ser
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	Glu	Ile	Asp	Leu	Phe	Val	Ile	Asn	Lys	Ile	Lys	Glu	Lys	Arg	Lys	Glu
			20						25					30		
	Leu	Lys	Val	Ser	Gln	Arg	Gly	Met	Ala	Glu	Ile	Leu	Asp	Cys	Ser	Ala
			35					40					45			
	Gly	Phe	Ile	Gly	Gln	Val	Glu	Ser	Glu	Asn	Ser	Asp	Thr	Lys	Tyr	Ser
		50					55				60					
	Val	Tyr	Gln	Leu	Tyr	Leu	Ile	Ala	Lys	Asp	Phe	Asn	Cys	Ser	Pro	Ala
					70					75						80
	Asp	Phe	Phe	Pro	Pro	Phe	Asn	Ile	Lys	Asp						
					85					90						

<210> 8034  
 <211> 832  
 <212> PRT  
 <213> B.fragilis

<400> 8034	Met	Lys	Lys	Phe	Leu	Pro	Asp	Leu	Ile	Ala	Ile	Leu	Ala	Phe	Ile	Val
1					5					10					15	
	Ile	Ser	Phe	Ile	Tyr	Phe	Phe	Pro	Ala	Ile	Thr	Glu	Asp	Arg	Ile	Leu
			20						25					30		
	Phe	Gln	His	Asp	Thr	Val	Ala	Gly	Ala	Gly	Ala	Gly	Gln	Glu	Ala	Lys
			35					40					45			
	Glu	Tyr	Tyr	Glu	Arg	Thr	Gly	Glu	Arg	Thr	Arg	Trp	Thr	Asn	Ala	Leu
		50					55				60					
	Phe	Gly	Gly	Met	Pro	Thr	Tyr	Gln	Met	Ser	Pro	Ser	Tyr	Asp	Ser	Thr
						70					75					80

Glu	Pro	Leu	Thr	Phe	Val	Gln	Lys	Val	Tyr	His	Leu	Phe	Leu	Pro	Asn
				85					90					95	
Tyr	Val	Trp	Leu	Thr	Phe	Ile	Met	Met	Leu	Gly	Phe	Tyr	Ile	Leu	Leu
			100					105					110		
Arg	Ala	Phe	Gly	Ile	Pro	Ala	Trp	Leu	Ala	Gly	Leu	Gly	Gly	Ile	Ile
		115					120					125			
Trp	Gly	Phe	Ser	Ser	Tyr	Phe	Phe	Ile	Leu	Ile	Ala	Ala	Gly	His	Ile
	130					135					140				
Trp	Lys	Phe	Ile	Thr	Leu	Ala	Tyr	Ile	Pro	Pro	Thr	Ile	Ala	Gly	Ile
145					150					155					160
Val	Leu	Ala	Tyr	Arg	Lys	Lys	Tyr	Leu	Leu	Gly	Gly	Ile	Ile	Thr	Ala
			165					170						175	
Leu	Phe	Met	Ala	Met	Gln	Ile	Leu	Ser	Asn	His	Val	Gln	Met	Thr	Tyr
			180					185					190		
Tyr	Phe	Leu	Phe	Val	Ile	Leu	Phe	Met	Val	Gly	Ala	Phe	Phe	Glu	Asp
		195					200					205			
Ala	Trp	Arg	Lys	Lys	Glu	Leu	Pro	Gln	Phe	Phe	Lys	Ala	Thr	Gly	Val
	210				215						220				
Leu	Ile	Val	Ala	Gly	Leu	Ile	Gly	Val	Ser	Ile	Asn	Leu	Ser	Asn	Leu
225					230					235					240
Tyr	His	Thr	Tyr	Glu	Tyr	Ser	Lys	Glu	Thr	Met	Arg	Gly	Lys	Ser	Glu
			245						250					255	
Leu	Lys	Tyr	Glu	Gly	Ala	Ala	Ala	Lys	Gln	Thr	Ser	Ser	Gly	Leu	Asn
			260					265					270		
Arg	Asp	Tyr	Ile	Thr	Gln	Trp	Ser	Tyr	Gly	Ile	Gly	Glu	Thr	Phe	Ser
		275					280					285			
Leu	Leu	Val	Pro	Asn	Val	Lys	Gly	Gly	Ala	Ser	Val	Pro	Leu	Ser	Arg
	290					295					300				
Ser	Glu	Lys	Ala	Met	Glu	Lys	Ala	Asn	Pro	Met	Tyr	Ser	Ser	Leu	Tyr
305					310					315					320
Ser	Gln	Leu	Thr	Gln	Tyr	Phe	Gly	Asp	Gln	Pro	Met	Thr	Ser	Gly	Pro
			325						330					335	
Val	Tyr	Val	Gly	Ala	Phe	Val	Leu	Met	Leu	Phe	Ile	Leu	Gly	Cys	Phe
			340					345					350		
Ile	Val	Lys	Gly	Pro	Met	Lys	Trp	Ala	Leu	Leu	Gly	Ala	Thr	Ile	Phe
		355					360					365			
Ser	Ile	Leu	Leu	Ser	Trp	Gly	Lys	Asn	Phe	Met	Gly	Leu	Thr	Asp	Phe
	370					375					380				
Phe	Ile	Asp	Tyr	Ile	Pro	Met	Tyr	Asn	Lys	Phe	Arg	Ala	Val	Ser	Ser
385					390					395					400
Ile	Leu	Val	Ile	Ala	Glu	Phe	Thr	Ile	Pro	Leu	Leu	Ala	Ile	Leu	Thr
			405						410					415	
Leu	Lys	Glu	Ile	Leu	Thr	Lys	Pro	Glu	Leu	Leu	Lys	Glu	Lys	Leu	Lys
			420					425					430		
Tyr	Ile	Tyr	Ile												

545		550		555		560									
Thr	Gln	Thr	Asp	Glu	Leu	Ile	Leu	Gln	Asp	Pro	Ser	Leu	Asp	Tyr	Arg
		565		570		575									
Val	Leu	Asn	Phe	Ala	Gly	Asn	Thr	Phe	Glu	Glu	Asn	Asn	Thr	Ser	Tyr
		580		585		590									
Trp	His	Lys	Ser	Val	Gly	Gly	Tyr	His	Ala	Ala	Lys	Leu	Arg	Arg	Tyr
		595		600		605									
Gln	Glu	Met	Ile	Asp	His	His	Ile	Ala	Lys	Glu	Met	Gln	Ala	Ala	Tyr
	610				615					620					
Gln	Glu	Val	Ala	Thr	Ala	Gly	Gly	Gln	Met	Asp	Ser	Val	Asn	Ala	Ala
	625				630					635					640
Lys	Phe	Pro	Val	Leu	Asn	Met	Leu	Asn	Thr	Lys	Tyr	Phe	Ile	Phe	Pro
				645					650					655	
Ala	Gly	Gln	Gln	Gly	Gln	Thr	Val	Pro	Ile	Glu	Asn	Pro	Tyr	Thr	Phe
				660					665					670	
Gly	Asn	Ala	Trp	Phe	Ile	Asp	Lys	Ile	Gln	Tyr	Val	Asn	Asn	Ala	Asn
		675				680					685				
Glu	Glu	Ile	Asp	Ala	Ile	Gly	Gln	Val	Asp	Leu	Gln	Gln	Thr	Ala	Ile
	690					695					700				
Val	Asp	Ser	Lys	Phe	Lys	Glu	Ala	Leu	Lys	Gly	Val	Asn	Glu	Gly	Tyr
	705				710					715					720
Lys	Asp	Ser	Leu	Ser	Thr	Ile	Arg	Leu	Thr	Ser	Tyr	Glu	Pro	Asn	Gln
				725					730						735
Leu	Val	Tyr	Glu	Thr	Ser	Ser	Pro	Gln	Asp	Gly	Ile	Val	Val	Phe	Ser
		740						745					750		
Glu	Ile	Tyr	Tyr	Pro	Gly	Trp	Thr	Ala	Thr	Ile	Asp	Gly	Lys	Pro	Ala
		755					760					765			
Asp	Ile	Ala	Arg	Ala	Asp	Tyr	Ile	Leu	Arg	Ala	Met	Asn	Val	Pro	Ala
	770					775					780				
Gly	Lys	His	Thr	Ile	Glu	Met	Arg	Phe	Asp	Pro	Gln	Ser	Leu	His	Ile
	785				790					795					800
Thr	Glu	Gly	Ile	Ala	Tyr	Gly	Ala	Met	Ala	Leu	Leu	Leu	Val	Gly	Val
				805				810						815	
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 20 25 30  
 Asp Val Ala Ala Glu Cys Gly Val Ser Arg Ala Ala Ile His Gln Arg  
 35 40 45  
 Val Gln Arg Leu Ile Asp Leu Gly Val Ile Val Gly Ser Gly Tyr His  
 50 55 60  
 Val Asn Pro Lys Ser Leu Gly Tyr Arg Thr Cys Thr Tyr Val Gly Ile  
 65 70 75 80  
 Lys Leu Glu Lys Gly Ser Met Tyr Lys Ala Val Val Ala Glu Leu Gln  
 85 90 95  
 Lys Ile Pro Glu Ile Val Glu Cys His Phe Thr Thr Gly Pro Tyr Thr  
 100 105 110  
 Met Leu Thr Lys Val Tyr Ala Arg Asp Asn Glu His Leu Met Asp Leu  
 115 120 125  
 Leu Asn Asn Lys Met Gln Glu Ile Pro Gly Val Thr Ala Thr Glu Thr

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 Asp Lys

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 Pro Asn Asp Thr Leu Ser Phe Trp Lys Thr Thr Leu Pro Tyr Lys Gly  
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 Glu Glu Gly Glu Val Ala Phe Asn Val Ile Val Ser Glu Pro Asn Lys  
 65 70 75 80  
 Phe Cys Tyr Ser Gly Glu Gln Pro His Thr Gln Cys Tyr Ser Met Ile  
 85 90 95  
 Tyr Lys Pro Val Ser Gly Glu Ser Gln Ala Ser Ser Arg Gln Ala Leu  
 100 105 110  
 Met Ile Ile Val Glu Glu Gly Asp Tyr His Leu Lys Gly Glu Thr Asp  
 115 120 125  
 Phe Ile Tyr Tyr Ser Ala Ile Ser Gly Gly Leu Tyr Asp Asp Pro Ser  
 130 135 140  
 Leu Lys Glu Ile Val His Met Glu Asp Ser Leu Glu Ile Ile Arg Thr  
 145 150 155 160  
 Arg Tyr Arg Lys Ile Val Asp Glu Ala Arg Lys Lys Gly Asp Met Glu  
 165 170 175  
 Lys Ala Lys Glu Tyr Val Asp Lys Phe Asn Arg Phe His Ser Asn His  
 180 185 190  
 Gln Glu Ser Tyr Ala Leu Leu Gln Arg Lys Thr Lys Glu Leu Val Ala  
 195 200 205  
 Asn Asn Pro Ser Ser Thr Trp Val Ile Val Glu Tyr Leu Gln Lys Val  
 210 215 220  
 Ser Tyr Ala Ala Pro Glu Glu Met Lys Ser Val Leu Leu Asn Met Asp  
 225 230 235 240  
 Gln Glu Ala Gln Asn Ser Tyr Tyr Gly Gln Ile Phe Arg Arg Glu Val  
 245 250 255  
 Glu Ala Ile Glu Arg Leu Ala Pro Gly Asn Glu Ala Pro Leu Phe Ser  
 260 265 270  
 Val Thr Thr Thr Asp Gly Lys Arg Ile Thr Ser Asp Asp Thr Arg Gly  
 275 280 285  
 Lys Tyr Leu Leu Leu Tyr His Trp Gly Leu Cys Pro Gly Ser Ile Ser  
 290 295 300  
 Val Asp Lys Arg Val Thr Val Phe Tyr Glu Lys Tyr Lys Asp His Leu  
 305 310 315 320  
 Ser Val Val Gly Ile Thr Asp Asn Met Glu Thr Ile Cys Glu Leu Asn  
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 Lys Asn Val Gly Glu Asp Asp Glu Val Leu Gly Met Lys Leu Lys Pro  
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 Val Leu Glu Asn Met Leu Ala His Pro Trp Pro Glu Val Glu Ser Thr  
 355 360 365  
 Gly Asp Asn His Lys Ile Ile Glu Asp Phe Ala Phe Ala Gly Leu Pro

116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999 1000

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 <212> PRT  
 <213> B.fragilis

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 35 40 45  
 Pro Ser Ala Thr Pro Ala Gly Ile Val Ile Arg Thr Cys Leu Pro Phe  
 50 55 60  
 Thr Phe Asn Thr Cys Leu Trp Val Arg Ala Ala Ser Arg Arg Asp Arg  
 65 70 75 80  
 Cys Asn Ser Ala Leu Lys Ser Cys Pro Arg Lys Pro Ala Leu Pro Arg  
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 Pro Pro Pro Pro Leu Cys Pro Asn Ile Asp Ser Lys Lys Ser Glu Asn  
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 35 40 45  
 Gly Arg Tyr Leu Gly Ile Asp Lys Cys Gln His Leu Glu Thr Leu Leu  
 50 55 60  
 Pro Phe Gly Thr Phe Val Val Phe Cys Val Glu Ser Arg Arg Ile Ile  
 65 70 75 80  
 Ser Ile Phe Thr Val Asp Ser Ser Gln His Ala Ile Met Thr Ile Gln  
 85 90 95  
 Leu Leu Leu Val Thr Gly Val Thr Asp Cys Leu Trp Leu Tyr Val Leu  
 100 105 110  
 Ser Leu Leu Leu Phe Leu Thr Val Cys Phe Leu Leu Tyr Gln Asn Phe  
 115 120 125  
 Leu Leu Arg Lys Ser Ala Ser Ala Asp Asp Asp Tyr Arg Arg Phe Leu  
 130 135 140  
 Phe Asp Ile Leu Asp Asn Leu Pro Phe Pro Ile Met Val Lys Asp Ile  
 145 150 155 160  
 Gln Glu Gln Phe Lys Tyr Thr Tyr Trp Asn Lys Glu Ser Glu Leu Gln  
 165 170 175

Ser Gly Ile Ser Arg Lys Asp Ala Val Gly Phe Ser Asp Val Asp Ile  
 180 185 190  
 Phe Gly Glu Glu Arg Gly Lys Gln Tyr Arg Lys Ile Asp Glu Asp Leu  
 195 200 205  
 Val Arg Ala Gly Ile Pro Tyr Lys Ala Glu Glu Arg Tyr Val Thr Ala  
 210 215 220  
 Asp Gly Lys Val His Asp Thr Leu Val Met Lys Ser Ile Ile Ser Ser  
 225 230 235 240  
 Gly Lys Leu Gly Lys Trp Leu Leu Val Ala Arg Trp Glu Ile Thr Gln  
 245 250 255  
 Leu Lys Met Tyr Glu Arg Glu Leu Leu Ala Ala Lys Glu Gln Leu Glu  
 260 265 270  
 Gly Ala Val Cys Lys Gln Lys Leu Ala Leu Arg Ser Ile Asp Phe Gly  
 275 280 285  
 Leu Ile Tyr Ile Asp Arg Asn Tyr Leu Val Gln Trp Glu Glu Thr Gly  
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 Asn Ile Lys Asn Leu Val Ser Gly Arg His Tyr Thr Pro Gly Thr Val  
 305 310 315 320  
 Cys Tyr Arg Thr Thr Gly Gln Gly Thr Gln Pro Cys Gly Lys Cys Ala  
 325 330 335  
 Phe Arg Glu Ala Ile Gly Thr Gly Lys Ile Val Arg His Ile Thr His  
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 Val Asp His Val Asp Phe Glu Ile Thr Ala Thr Pro Val Tyr Asp Asp  
 355 360 365  
 Thr Gly Asn Glu Ile Ile Gly Gly Leu Leu Arg Phe Glu Asp Ile Thr  
 370 375 380  
 Glu Lys Leu Lys Val Glu Arg Met Leu Gln Glu Ala Lys Glu Lys Ala  
 385 390 395 400  
 Glu Glu Ser Asn Arg Leu Lys Ser Ala Phe Leu Ala Asn Met Ser His  
 405 410 415  
 Glu Ile Arg Thr Pro Leu Asn Ala Ile Ile Gly Phe Ser Asp Leu Ile  
 420 425 430  
 Cys Gln Thr Asp Asp Ala Glu Glu Lys Glu Glu Tyr Ile Arg Ile Val  
 435 440 445  
 Thr Ser Asn Asn Glu Leu Leu Leu Gln Leu Ile Asp Asp Ile Leu Asp  
 450 455 460  
 Leu Ser Lys Ile Glu Ala Gly Thr Met Asp Phe Ser Tyr Ala Pro Thr  
 465 470 475 480  
 Asp Ile Asn Glu Leu Met Glu Asp Ile Cys Leu Gln Met Gln Gln Lys  
 485 490 495  
 Asn Gln Arg Pro Glu Val Gln Ile Met Phe Thr Glu Lys Glu Pro Gly  
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 Cys Val Ile Asn Thr Asp Arg Leu Arg Leu Ser Gln Val Ile Met Asn  
 515 520 525  
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 Gly Tyr Arg Leu Thr Arg Gln Lys Asp Glu Leu Tyr Phe Phe Val Lys  
 545 550 555 560  
 Asp Thr Gly Ile Gly Ile Pro Ala Asp Gln Ala Gly Lys Val Phe Glu  
 565 570 575  
 Arg Phe Val Lys Leu Asn Thr Phe Ile Lys Gly Thr Gly Leu Gly Leu  
 580 585 590  
 Ala Ile Cys Arg Val Ile Ile Glu Arg Leu Gly Gly Thr Ile Gly Val  
 595 600 605  
 Glu Thr Arg Glu Gly Lys Gly Ser Cys Phe Trp Phe Arg Leu Pro Val  
 610 615 620  
 Arg Glu Asp Met Leu Leu Glu Ser Pro Val Arg  
 625 630 635

180 185 190  
 195 200 205  
 210 215 220  
 225 230 235 240  
 245 250 255  
 260 265 270  
 275 280 285  
 290 295 300  
 305 310 315 320  
 325 330 335  
 340 345 350  
 355 360 365  
 370 375 380  
 385 390 395 400  
 405 410 415  
 420 425 430  
 435 440 445  
 450 455 460  
 465 470 475 480  
 485 490 495  
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 565 570 575  
 580 585 590  
 595 600 605  
 610 615 620  
 625 630 635

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 Lys Asp Trp Asn Ser Phe Leu Arg Lys Thr Leu Val Glu Val Leu Met  
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 Ser Phe Pro Ala Tyr Ser Tyr Ala Thr Gln Ala Thr Glu Val Leu Val  
 35 40 45  
 Pro Glu Val Thr Gln Glu Lys Val Thr Gly Thr Val Glu Asp Ala Leu  
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 Gly Pro Val Ile Gly Ala Ser Val Met Val Lys Gly Thr Thr Asn Gly  
 65 70 75 80  
 Val Ile Thr Asp Leu Glu Gly Lys Phe Ser Leu Asn Asp Val Lys Lys  
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 Gly Asp Ile Ile Val Ile Ser Tyr Ile Gly Tyr Val Thr Gln Glu Ile  
 100 105 110  
 Pro Tyr Thr Gly Lys Pro Ile Gln Val Lys Leu Ala Glu Asp Ser Lys  
 115 120 125  
 Ala Leu Glu Glu Val Val Val Val Gly Tyr Ala Thr Val Lys Lys Ala  
 130 135 140  
 Asn Leu Thr Gly Ala Val Ser Ala Val Asp Gly Lys Val Leu Glu Asp  
 145 150 155 160  
 Arg Pro Ile Val Asn Leu Gly Gln Gly Leu Gln Gly Ala Ile Pro Asn  
 165 170 175  
 Leu Asn Val Thr Thr Ser Gly Arg Pro Gly Gln Gly Ser Ser Phe Asn  
 180 185 190  
 Ile Arg Gly Thr Thr Ala Met Ser Gly Ser Ser Pro Leu Val Leu Val  
 195 200 205  
 Asp Gly Val Glu Met Asp Pro Asn Leu Ile Asn Pro Gln Asp Val Lys  
 210 215 220  
 Ser Val Ser Val Leu Lys Asp Ala Ala Ser Ala Ser Ile Tyr Gly Ala  
 225 230 235 240  
 Arg Ala Ala Tyr Gly Val Val Leu Ile Thr Thr Lys Gly Gly Arg Lys  
 245 250 255  
 Asp Gln Pro Thr Gln Val Ser Phe Asp Ala Ser Val Ser Phe Asn Gly  
 260 265 270  
 Pro Thr Thr Arg Pro Thr Tyr Met Asn Ser Met Gln Tyr Ala Thr Trp  
 275 280 285



Met	Asn	Thr	Ala	Gln	Gln	Asn	Thr	Val	Gly	Arg	Asp	Tyr	Phe	Asp	Ala
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Glu	Trp	Met	Gln	His	Ile	Glu	Ala	Tyr	Tyr	Lys	Asp	Pro	Val	Asn	Asn
305					310					315					320
Ser	Pro	Val	Phe	Ile	His	Ser	Asp	Pro	Ser	Ile	Ser	Lys	Asn	Gly	Thr
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Lys	Tyr	Thr	Tyr	Ala	Gly	Asn	Thr	Asn	Trp	Met	Lys	Glu	Leu	Tyr	Lys
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Lys	Asn	Tyr	Pro	Val	Gln	Lys	Tyr	Asn	Val	Asn	Ile	Ser	Gly	Gly	Gly
		355						360				365			
Lys	Lys	Ala	Thr	Tyr	Tyr	Thr	Ser	Leu	Gly	Tyr	Thr	Asp	Gln	Gly	Ser
		370					375					380			
Leu	Ile	Arg	Phe	Gly	Asn	Glu	Gln	Phe	Lys	Lys	Phe	Asn	Val	Met	Asn
385					390					395					400
Asn	Ile	Asn	Tyr	Asp	Val	Asn	Asp	Trp	Leu	His	Leu	Ser	Met	Lys	Thr
				405					410					415	
Ser	Phe	Asn	Arg	Thr	Lys	Leu	Arg	Gly	Leu	Asn	Gln	Asp	Asn	Val	His
			420					425					430		
Gly	Asp	Asn	Phe	Met	Gly	Gly	Asp	Thr	Arg	Pro	Ile	Met	Pro	Val	Lys
		435					440					445			
His	Pro	Asp	Gly	Asn	Trp	Ala	Gly	Gln	Gly	Asp	Phe	Thr	Asn	Phe	Pro
		450					455					460			
Ala	Ile	Leu	Glu	Asp	Gly	Gly	Ser	Arg	Leu	Thr	Asn	Lys	Asn	Asp	Leu
465					470					475					480
Trp	Asn	Thr	Ile	Thr	Met	Lys	Leu	Thr	Pro	Ile	Lys	Gly	Met	Ser	Ile
				485					490					495	
Asn	Met	Asp	Tyr	Thr	Phe	Asn	Tyr	Tyr	Ser	Glu	Asn	Asn	Lys	Val	His
			500					505					510		
Met	Lys	Ser	Phe	Asp	Glu	Tyr	Gly	Ala	Asn	Gly	Gln	Phe	Leu	Gln	Thr
		515					520					525			
Phe	Ala	Trp	Thr	Asn	Pro	Asn	Ser	Val	Ser	Gln	Ser	Gln	Ala	Asn	Asp
		530					535					540			
Thr	Tyr	Asn	Ala	Phe	Asn	Phe	Phe	Gly	Asp	Tyr	Glu	Lys	Thr	Leu	Gly
545					550					555					560
Lys	His	Tyr	Leu	Lys	Gly	Met	Ile	Gly	Tyr	Asn	Gln	Glu	Ser	Lys	His
				565					570					575	
Thr	Thr	Gly	Phe	Asn	Ala	Gly	Arg	Glu	Gln	Leu	Ile	Ser	Asn	Asp	Leu
			580					585					590		
Gly	Ser	Leu	Ser	Tyr	Ala	Thr	Gly	Asp	Arg	Trp	Val	Gly	Ser	Ser	Asp
		595					600					605			
Asn	Ser	Trp	Ala	Thr	Arg	Ser	Gly	Phe	Phe	Arg	Ile	Asn	Tyr	Gly	Tyr
		610					615				620				
Asp	Glu	Arg	Tyr	Leu	Leu	Glu	Val	Asn	Gly	Arg	Tyr	Asp	Leu	Ser	Ser
625					630					635					640
Lys	Phe	Pro	Lys	His	Asp	Arg	Ala	Val	Phe	Asn	Pro	Ser	Phe	Ser	Ala
				645					650					655	
Ala	Trp	Arg	Leu	Ser	Asn	Glu	Ser	Trp	Phe	Lys	Ser	Trp	Thr	Asn	Ser
			660					665					670		
Phe	Phe	Asp	Glu	Leu	Lys	Ile	Arg	Gly	Ser	Tyr	Gly	Ser	Leu	Gly	Asn
		675					680					685			
Gln	Ala	Leu	Asn	Asn	Gly	Trp	Tyr	Ala	Tyr	Leu	Ser	Asn	Tyr	Ser	Thr
		690					695				700				
Gly	Gln	Ile	Ser	Trp	Ile	Met	Gly	Ser	Asn	Gln	Pro	Gln	Tyr	Val	Val
705					710					715					720
Pro	Gly	Gly	Leu	Val	Ser	Ser	Ser	Ile	Thr	Trp	Glu	Thr	Val	Thr	Gln
				725					730					735	
Trp	Asp	Leu	Gly	Leu	Asp	Phe	Asn	Phe	Leu	Asn	Ser	Arg	Leu	Lys	Gly
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Ala	Phe	Asp	Tyr	Tyr	Gln	Arg	Arg	Thr	Ser	Asp	Ile	Leu	Ala	Ala	Gly

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      755              760              765
Lys Ile Leu Pro Gly Val Leu Gly Ala Asn Glu Pro Gln Glu Asn Ala
770              775              780
Ala Glu Ser Leu Thr Lys Gly Trp Glu Phe Glu Ile Ser Trp Asn Asp
785              790              795              800
Gln Leu Ala Asn Gly Phe His Tyr Thr Val Gly Phe Asn Leu Ser Asp
805              810              815
Tyr Gln Ser Glu Val Thr Lys Phe Asp Asn Glu Ser Lys Glu Leu Gly
820              825              830
Asn Trp Tyr Val Gly Gln Lys Gln Gly Glu Ile Trp Gly Tyr Glu Thr
835              840              845
Tyr Gly Leu Phe Gln Ser Glu Gln Glu Ile Ala Gly Ala Ala Asn Gln
850              855              860
Asp Lys Val Ser Gly Gly Ile Lys Leu Met Pro Gly Asp Ile Arg Phe
865              870              875              880
Val Asp Arg Asn Asn Asp Gly Val Ile Asp Trp Gly Asp Asn Thr Val
885              890              895
Asp Asn Pro Gly Asp Lys Lys Ile Ile Gly Asn Ser Thr Pro Arg Tyr
900              905              910
His Tyr Gly Ile Asn Leu Gly Ala Asp Trp Lys Gly Phe Asp Leu Gly
915              920              925
Ile Phe Phe Gln Gly Val Gly Lys Arg Asp Leu Tyr Leu Pro Gly Thr
930              935              940
Ser Phe Arg Ser His Tyr Gly Ser Glu Trp Gln Val Pro Ser Ala Tyr
945              950              955              960
Asn Asn Asp Tyr Trp Thr Glu Glu Asn Thr Gly Ala Tyr Phe Pro Arg
965              970              975
Ala Arg Phe Asn Gly Gly Ser Ala Ile Asn Gln Ala Gln Thr Arg Tyr
980              985              990
Met Val Asp Ala Ser Tyr Cys Arg Leu Lys Ser Val Ser Ile Gly Tyr
995              1000              1005
Thr Leu Pro Lys Val Leu Thr Gln Lys Ala Ser Ile Glu Lys Ile Arg
1010              1015              1020
Ile Tyr Phe Thr Gly Glu Asn Leu Phe Thr Ile Ser Asp Thr Pro Asp
1025              1030              1035              1040
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Ser Leu Ser Val Gly Leu Ser Leu Thr Phe
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 <213> B.fragilis

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Leu Gln Pro Gly Asp Lys Ile Val Ser Ser Gly Val His His Ile Glu
35          40          45
Asn Gly Glu Thr Val Lys Thr Leu Pro Glu Ile Thr His Thr Asn Ile
50          55          60
Gly Gly Leu Leu
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<210> 8042  
 <211> 206

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8042

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 Ser Thr Ile Gly Asn Asp Ile Leu Arg Lys Val Arg Phe Ser Asn Tyr  
 20 25 30  
 Asp Ser Pro Ala Asp Gln Asn Leu Arg Tyr Gln His Asn Val Ile Asn  
 35 40 45  
 Ala Tyr Ile Asn Ser Ile Arg Tyr Thr Asp Asp Phe Leu Ser Arg Leu  
 50 55 60  
 Ile Val Val Leu Gln Gln Gln Asp Ala Gly Ser Asp Ile Leu Tyr Thr  
 65 70 75 80  
 Ser Asp His Gly Glu Asp Ile Cys Asp Asp His Cys His Leu Phe Val  
 85 90 95  
 His Ala Ser Pro Val His Ser Lys Tyr Gln Leu His Val Pro Phe Ile  
 100 105 110  
 Val Trp Thr Ser Asp Thr Tyr Arg Glu Lys Tyr Pro Glu His Met Asp  
 115 120 125  
 Ala Ile Gln Lys Asn Arg His Lys Ser Val Val Ser Asn Arg Val Val  
 130 135 140  
 Phe His Ser Val Leu Asp Leu Ala Gly Val Thr Thr Thr Tyr Val Asn  
 145 150 155 160  
 Asp Ser Leu Ser Val Ala Ser Pro Ser Tyr Thr Glu Phe Pro Arg Phe  
 165 170 175  
 Tyr Leu Asn Asp His Asn Glu Pro Arg Ser Tyr Asp Asp Ile Gly Leu  
 180 185 190  
 Arg Lys Glu Asp Phe Glu Met Phe Gly Lys Met Gly Ile Arg  
 195 200 205

&lt;210&gt; 8043

&lt;211&gt; 66

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8043

Ile Pro Phe Leu Ile Asp Arg Gly Glu Ser Lys Ile Leu Cys Leu Lys  
 1 5 10 15  
 Pro Gln Thr Met Asn Ile Pro Asn Thr Ser Tyr Glu Val Asp Phe Glu  
 20 25 30  
 Arg Gly Asn Pro Ile Phe Leu Lys Ala Leu Arg Ala Arg Leu Pro Phe  
 35 40 45  
 Gly Lys Leu Trp Asp Leu Gly Ile Arg Ile Asn Asn Arg Thr Phe Gln  
 50 55 60  
 Pro Phe  
 65

&lt;210&gt; 8044

&lt;211&gt; 282

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8044

Met Ser Val Tyr Lys Asn Thr Ser Phe Val Leu Pro Leu Gln Lys Lys  
 1 5 10 15  
 Ser Thr Lys Lys Ala Leu Leu Thr Ile Lys Ser Pro Ala Lys Glu Ile  
 20 25 30  
 Glu Ser Thr Asn Arg Gly Ile Leu Ser Val Ile Ile Tyr Leu Cys Ser

35	40	45
Pro Lys Lys Ile Pro Ile Ser Asn Met Lys Lys Ile Trp Ile Leu Ala		
50	55	60
Val Leu Thr Ile Cys Ser Val Ala Thr Gln Ala Gln Glu Val Phe Ile		
65	70	75
Asn Ala Asp Leu Val Ser Ser Tyr Ile Trp Arg Gly Met Lys Asn Gly		
	85	90
Asn Ala Ser Val Gln Pro Thr Leu Gly Val Glu Trp Lys Gly Trp Thr		
	100	105
Leu Ser Ala Trp Gly Ser Thr Glu Phe Arg Asn Glu Asn Asn Glu Ile		
	115	120
Asp Leu Thr Leu Glu Tyr Glu Tyr Lys Asn Leu Gln Leu Cys Leu Asn		
	130	135
Asn Tyr Phe Tyr Gln Ser Glu Asn Glu Pro Phe Lys Tyr Phe His Tyr		
145	150	155
Thr Pro Arg Thr Thr Gly His Thr Phe Glu Ala Gly Ala Val Tyr Thr		
	165	170
Val Ser Glu Arg Phe Pro Leu Ser Ile Gly Trp Tyr Thr Thr Phe Ala		
	180	185
Gly Asn Asp Tyr Arg Glu Asn Glu Glu Arg Ala Trp Ser Ser Tyr Cys		
	195	200
Glu Phe Ser Tyr Pro Phe Thr Val Lys Gly Val Asp Leu Ala Val Glu		
	210	215
Ala Gly Phe Thr Pro Trp Glu Gly Glu Tyr Ala Asp Lys Leu Asn Val		
225	230	235
Val Asn Val Gly Leu Ser Ala Thr Lys Thr Leu Asn Ile Ser Ser Gly		
	245	250
Phe Thr Pro Ala Ile Phe Gly Lys Leu Ile Ala Asn Pro Tyr Glu Asn		
	260	265
Arg Phe Tyr Phe Val Phe Gly Ile Ser Leu		
	275	280

&lt;210&gt; 8045

&lt;211&gt; 309

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;220&gt;

&lt;221&gt; UNSURE

&lt;222&gt; (22)

&lt;223&gt; Identity of amino acid sequences at the above locations are unknown.

&lt;400&gt; 8045

Asn Leu Ala Tyr Gly Leu Ile Trp Asn Arg Phe Leu Ile Lys Asn Arg		
1	5	10
Arg Met Ile Asp Thr Xaa Met Pro Phe Arg Arg Ile Leu Leu Thr Ser		
	20	25
Asp Thr Phe Gln Ile Leu Lys Glu Gly Gln Ile Ile Ser Thr Phe Asn		
	35	40
Lys Cys Gly Ile Phe Tyr Cys Gln Arg Gly Ser Val Glu Val Ser Leu		
	50	55
Glu Gly Cys His Tyr His Ile Lys Pro Gly Asp Val Tyr Ile Tyr Met		
65	70	75
Ala Ser Thr Leu Val His Leu Leu His Lys Ser Glu Asp Ala Glu Gly		
	85	90
Ile Met Val Glu Val Asp Phe Tyr Tyr Ile Leu Pro Ile Val Asn Lys		
	100	105
Val Ile Asn Val Glu Ser Gln Leu Phe Met Arg Lys Asn Pro Cys Val		
	115	120
		125

Ser Leu Ser Gly Glu Gln Cys Ala His Phe Glu Tyr Leu Leu Asn Asn  
 130 135 140  
 Leu Trp Asp Arg Ile Asn Ala Glu Asp Cys Gln Lys Glu Asn Val Gln  
 145 150 155 160  
 Tyr Gln His Leu Lys Leu Glu Leu Ile Lys Ser Met Gly Gln Thr Ile  
 165 170 175  
 Cys Tyr Glu Ile Leu Asn Met Tyr Phe Thr Asn Gln Pro Leu Gln Pro  
 180 185 190  
 Leu Gln Gln Gly Lys Lys Asp Val Val Phe Gln Asn Phe Met Leu Ser  
 195 200 205  
 Leu Phe Arg Phe Tyr Arg Lys Glu Arg Asp Val Ser Phe Tyr Ala Arg  
 210 215 220  
 Met Gln His Ile Thr Pro Arg Tyr Phe Ser Ala Ile Ile Lys Glu Lys  
 225 230 235 240  
 Thr Gly Asp Ser Ala Leu Gln Trp Ile Val Arg Met Val Ile Thr Glu  
 245 250 255  
 Ala Lys Gln Leu Leu Glu Glu Ser Asp Leu Ser Ile Lys Glu Ile Ala  
 260 265 270  
 Asp Gln Leu Asn Phe Pro Thr Gln Ser Phe Phe Gly Lys Tyr Phe Lys  
 275 280 285  
 Gln Tyr Val Gly Val Ser Pro Lys Glu Tyr Arg Asn Asn Thr Ala Thr  
 290 295 300  
 Thr Arg Ile Lys Arg  
 305

<210> 8046  
 <211> 754  
 <212> PRT  
 <213> B.fragilis

<400> 8046  
 Asn His Ser His Lys Tyr Arg Arg Thr Val Ile Met Asp Ile Ser Lys  
 1 5 10 15  
 Trp Ala Phe His Asn Arg Asn Leu Ile Tyr Phe Leu Ile Ala Val Leu  
 20 25 30  
 Met Phe Gly Gly Ala Tyr Ser Cys Tyr Gln Met Ser Lys Leu Glu Asp  
 35 40 45  
 Pro Glu Ile Lys Val Lys Leu Ala Met Val Val Thr Thr Tyr Pro Gly  
 50 55 60  
 Ala Ser Ala His Gln Val Glu Leu Glu Val Thr Asp Val Leu Glu Lys  
 65 70 75 80  
 Asn Ile Arg Thr Met Gly Asn Ile Asp Asn Ile Glu Ser Tyr Ser Tyr  
 85 90 95  
 Asn Asp Leu Ser Leu Ile Gln Ile Glu Leu Leu Ser Thr Val Pro Asp  
 100 105 110  
 Asp Asp Val Glu Gln Cys Trp Asp Met Leu Arg Arg Lys Val Asn Asp  
 115 120 125  
 Ala Arg Ala Ser Leu Pro Glu Gly Val Ser Ala Pro Ile Val Lys Asp  
 130 135 140  
 Asp Phe Gly Asn Val Tyr Gly Met Phe Tyr Ala Leu Thr Gly Asp Gly  
 145 150 155 160  
 Leu Ser Asp Arg Glu Leu Ser Asp Tyr Ala Glu Leu Ile Lys Arg Glu  
 165 170 175  
 Val Gly Glu Leu Glu Gly Val Asp Arg Ile Asp Leu Tyr Gly Lys Arg  
 180 185 190  
 Pro Glu Cys Ile Asn Ile Ser Leu Leu Gln Asp Arg Met Ala Asn Leu  
 195 200 205  
 Gly Val Lys Pro Ala Glu Val Leu Ala Thr Leu Asn Gly Gln Asn Lys  
 210 215 220

Thr Thr Tyr Thr Gly Tyr Tyr Asp Asn Gly Asp Asn Arg Ile Arg Val  
 225 230 235 240  
 Thr Val Asn Asp Lys Phe Lys Thr Val Glu Asp Ile Gly Lys Met Leu  
 245 250 255  
 Ile Gln Gly His Asp Asp Asp Gln Leu Arg Leu Ser Asp Ile Ala Gln  
 260 265 270  
 Ile Glu Lys Gly Tyr Glu Glu Pro Val Arg Asn Glu Met Tyr Tyr Asp  
 275 280 285  
 Gly Glu Arg Ala Leu Gly Ile Leu Ile Ala Ala Thr Ser Gly Ser Asp  
 290 295 300  
 Ile Val Lys Val Gly His Ala Val Glu Ala Arg Leu Ala Glu Leu Lys  
 305 310 315 320  
 Ala Glu Arg Leu Pro Ala Gly Val Glu Tyr Gln Lys Val Phe Tyr Gln  
 325 330 335  
 Pro Glu His Val Gly Glu Ser Leu Gly Thr Phe Val Ile Asn Leu Ile  
 340 345 350  
 Glu Ser Val Ile Ile Val Val Leu Ile Leu Met Ile Ala Met Gly Phe  
 355 360 365  
 Lys Ser Gly Val Ile Ile Gly Ile Ser Leu Val Val Thr Val Phe Gly  
 370 375 380  
 Ser Phe Leu Phe Leu Tyr Ser Ala Gly Gly Thr Met Gln Arg Val Ser  
 385 390 395 400  
 Leu Ala Ala Phe Val Leu Ala Met Gly Met Leu Val Asp Asn Ala Ile  
 405 410 415  
 Val Ile Ile Asp Gly Ile Leu Val Asp Leu Lys Ala Gly Lys Asp Arg  
 420 425 430  
 Met Glu Ala Met Thr Ala Ile Gly Arg Gln Thr Ala Met Pro Leu Leu  
 435 440 445  
 Gly Ala Thr Leu Ile Ala Ile Ile Ala Phe Leu Pro Ile Tyr Met Ser  
 450 455 460  
 Pro Asp Thr Ala Gly Val Tyr Thr Arg Asp Leu Phe Ile Val Leu Ala  
 465 470 475 480  
 Val Ser Leu Leu Leu Ser Trp Val Leu Ala Leu Val His Val Pro Leu  
 485 490 495  
 Met Ala Asn Arg Arg Leu His Phe Ala Val Glu Ala Tyr Ser Gly Gly  
 500 505 510  
 Lys Arg Val Tyr Lys Gly Lys Ile Tyr Ala Ala Leu Arg Thr Ala Leu  
 515 520 525  
 Arg Phe Gly Leu Ala His Arg Trp Ser Phe Val Phe Thr Met Val Gly  
 530 535 540  
 Leu Leu Ala Leu Ser Val Phe Gly Tyr Gln Tyr Met Arg Gln Gly Phe  
 545 550 555 560  
 Phe Pro Asp Met Val Tyr Asp Gln Leu Tyr Met Glu Tyr Lys Leu Pro  
 565 570 575  
 Glu Gly Asn Asn Tyr Thr Arg Val Glu Gln Asp Leu Lys Glu Ile Glu  
 580 585 590  
 Ala Tyr Leu Lys Gly Arg Lys Glu Ile Thr His Val Thr Ala Ser Ile  
 595 600 605  
 Gly Gly Thr Pro Gly Arg Tyr Asn Leu Val Arg Ser Val Ala Asn Pro  
 610 615 620  
 Ser Leu Ser Tyr Gly Glu Leu Ile Ile Asp Phe Thr Ser Pro Glu Glu  
 625 630 635 640  
 Leu Val Asp Asn Met Asp Glu Ile Gln Arg Tyr Leu Ser Ala Thr Tyr  
 645 650 655  
 Pro Asp Ala Tyr Ile Lys Leu Lys Arg Tyr Asn Leu Met Phe Lys Lys  
 660 665 670  
 Tyr Pro Ile Glu Ala Gln Phe Leu Gly Pro Asp Pro Ala Val Leu His  
 675 680 685  
 Gln Leu Ala Asp Ser Ala Arg Asn Ile Met Lys Asn Thr Pro Glu Val

690 695 700  
 Cys Leu Ile Thr Thr Asp Trp Glu Pro Gln Ile Pro Val Leu Thr Ile  
 705 710 715 720  
 Glu Tyr Asp Gln Pro Ala Ala Arg Ala Leu Gly Leu Ser Arg Ser Asp  
 725 730 735  
 Val Ser Met Ser Leu Leu Thr Ala Cys Arg Gly Ile Pro Ile Gly Ser  
 740 745 750  
 Phe Tyr

<210> 8047  
 <211> 76  
 <212> PRT  
 <213> B.fragilis

<400> 8047  
 Cys Leu Pro Gln Ala Met Pro Val Lys Val Val Arg Glu Asn Ile Pro  
 1 5 10 15  
 Glu Glu Asp Ala Gly Pro Ala Ser Ala Tyr Gln Ala Pro Val Ser Ala  
 20 25 30  
 Lys Gly Ala Val Thr Asn Ala Pro Glu Met Tyr Trp Glu Thr Pro Ser  
 35 40 45  
 Pro Tyr Pro Val Thr Pro Phe Leu Pro Asp Ser Gly Gly Val Ala Ser  
 50 55 60  
 Ala Ser Asp Ser Glu Ile Val Tyr Val Glu Glu Asp  
 65 70 75

<210> 8048  
 <211> 253  
 <212> PRT  
 <213> B.fragilis

<400> 8048  
 Cys Phe Thr Asn Tyr Ser Val Ile Met Ile Lys Cys Ile Ala Val Asp  
 1 5 10 15  
 Asp Glu Pro Leu Ala Leu Glu Gln Leu Thr Gly Tyr Ile Ala Arg Val  
 20 25 30  
 Pro Phe Leu Gln Leu Ile Ala Ser Cys Gln Asp Ala Phe Ser Ala Met  
 35 40 45  
 Gln Val Leu Ser Glu Glu Glu Val Asp Leu Met Phe Val Asp Ile His  
 50 55 60  
 Met Pro Asp Leu Asn Gly Leu Asp Leu Val Arg Ser Leu Val Val Lys  
 65 70 75 80  
 Pro Leu Ile Val Phe Thr Thr Ala Tyr Pro Glu Tyr Ala Val Glu Gly  
 85 90 95  
 Phe Lys Val Asp Ala Val Asp Tyr Leu Leu Lys Pro Phe Glu Phe Gln  
 100 105 110  
 Asp Leu Leu Lys Ala Ala Asp Lys Ala Arg Arg Gln Phe Glu Tyr His  
 115 120 125  
 Leu Gln Asp Asn Gly Gly Gly Thr Glu Thr Asp Leu Leu Glu Lys Asp  
 130 135 140  
 Gly Ser Leu Phe Val Lys Ser Glu Tyr Lys Ile Ile Arg Ile Asn Val  
 145 150 155 160  
 Ala Asp Ile Cys Tyr Ile Glu Gly Met Ser Glu Tyr Val Arg Ile Tyr  
 165 170 175  
 Thr Asp Thr Ala Asp Lys Pro Val Val Thr Leu Leu Ser Met Arg Lys  
 180 185 190  
 Leu Glu Glu Arg Leu Pro Gln Glu Met Phe Met Arg Val His Arg Ser  
 195 200 205

Tyr Ile Val Asn Leu Arg Lys Ile Thr Glu Val Ser Arg Leu Arg Ile  
 210 215 220  
 Ile Phe Asn Lys Asn Ile Tyr Ile Pro Val Gly Asp Asn Tyr Lys Glu  
 225 230 235 240  
 Arg Phe Thr Glu Tyr Ile Asn Lys Ile Cys Val Ser Ser  
 245 250

<210> 8049  
 <211> 568  
 <212> PRT  
 <213> B.fragilis

<400> 8049

Glu Met Ala Asn Phe Tyr Leu Asp Thr Pro Glu Leu Lys His His Leu  
 1 5 10 15  
 Asn His Pro Leu Met Lys Arg Ile Val Glu Leu Lys Glu Arg Asn Tyr  
 20 25 30  
 Ala Asp Lys Asp Lys Phe Asp Tyr Ala Pro Val Asp Phe Glu Asp Ala  
 35 40 45  
 Met Asp Ser Tyr Asp Lys Val Leu Glu Ile Val Gly Glu Ile Cys Gly  
 50 55 60  
 Asp Ile Ile Ala Pro Asn Ala Glu Gly Val Asp His Glu Gly Pro Val  
 65 70 75 80  
 Cys Ala Asp Asn Arg Val Thr Tyr Ala Ser Gly Thr Thr Arg Asn Leu  
 85 90 95  
 Asp Ala Cys Arg Lys Ala Gly Leu Met Gly Met Ala Met Pro Arg Arg  
 100 105 110  
 Phe Gly Gly Leu Asn Phe Pro Ile Thr Pro Tyr Ile Met Ala Ala Asp  
 115 120 125  
 Ile Val Ser Arg Ser Asp Ala Gly Phe Glu Asn Leu Trp Gly Leu Gln  
 130 135 140  
 Asp Cys Ala Glu Thr Ile Tyr Glu Phe Ala Asn Glu Glu Gln Lys Gln  
 145 150 155 160  
 Arg Tyr Ile Thr Arg Val Cys Gln Gly Glu Thr Met Ser Met Asp Leu  
 165 170 175  
 Thr Glu Pro Asp Ala Gly Ser Asp Leu Gln Ser Val Met Leu Lys Ala  
 180 185 190  
 Thr Tyr Ser Glu Lys Asp Gln Cys Trp Tyr Leu Asn Gly Val Lys Arg  
 195 200 205  
 Phe Ile Thr Asn Gly Asp Ala Asp Ile His Leu Val Leu Ala Arg Ser  
 210 215 220  
 Glu Glu Gly Thr His Asp Gly Arg Gly Leu Ser Met Phe Ile Tyr Asp  
 225 230 235 240  
 Lys Arg Asn Gly Gly Val Asn Val Arg Arg Ile Glu Asn Lys Met Gly  
 245 250 255  
 Ile Lys Gly Ser Pro Thr Cys Glu Leu Val Tyr Lys Asn Ala Lys Ala  
 260 265 270  
 Glu Leu Cys Gly Asp Arg Lys Leu Gly Leu Ile Lys Tyr Val Met Ala  
 275 280 285  
 Leu Met Asn Gly Ala Arg Leu Gly Ile Ala Ala Gln Ser Val Gly Leu  
 290 295 300  
 Ser Gln Ala Ala Tyr Asn Glu Ala Leu Ala Tyr Ala Lys Asp Arg Lys  
 305 310 315 320  
 Gln Phe Gly Lys Ala Ile Ile Glu Phe Pro Ala Val Ala Glu Ile Leu  
 325 330 335  
 Ser Leu Met Lys Ala Lys Leu Asp Ala Ser Arg Ser Leu Leu Tyr Glu  
 340 345 350  
 Thr Ala Arg Phe Val Asp Val Tyr Lys Ala Leu Asp Asp Ile Ala Lys  
 355 360 365



Glu Arg Lys Leu Thr Pro Glu Glu Arg Ala Glu Gln Lys Thr Phe Ala  
 370 375 380  
 Lys Leu Ala Asp Ala Phe Thr Pro Leu Gly Lys Gly Met Gly Ser Glu  
 385 390 395 400  
 Phe Ala Asn Gln Asn Ala Tyr Asp Cys Ile Gln Ile His Gly Gly Ser  
 405 410 415  
 Gly Phe Met Lys Asp Tyr Ala Cys Glu Arg Ile Tyr Arg Asp Ser Arg  
 420 425 430  
 Ile Thr Ser Ile Tyr Glu Gly Thr Thr Gln Leu Gln Val Ala Ala  
 435 440 445  
 Ile Arg Tyr Val Thr Thr Gly Ala Tyr Leu Ala Arg Ile Gln Glu Tyr  
 450 455 460  
 Glu Asn Met Pro Val Ala Pro Glu Leu Glu Gly Leu Gln Asn Arg Leu  
 465 470 475 480  
 Lys Ser Met Ala Ser Lys Tyr Ala Ala Cys Val Thr Gln Ile Thr Glu  
 485 490 495  
 Ala Lys Asp Gln Glu Leu Leu Asp Phe Cys Ala Arg Arg Leu Val Glu  
 500 505 510  
 Met Ala Ala His Ile Ile Met Gly His Leu Met Val Gln Asp Ala Ser  
 515 520 525  
 Lys Ser Asp Leu Phe Ser Glu Ser Ala Gln Val Tyr Val Arg Tyr Ala  
 530 535 540  
 Glu Ala Glu Val Glu Lys His Ile Asn Phe Ile Arg Lys Phe Asp Lys  
 545 550 555 560  
 Asp Asp Leu Ala Tyr Tyr Arg Lys  
 565

<210> 8050  
 <211> 81  
 <212> PRT  
 <213> B.fragilis

<400> 8050  
 Tyr Ile Ile Lys Ser Ile Ser Leu Lys Ser Ile Ser Leu Val Ile Val  
 1 5 10 15  
 Leu Pro Gly Ile Ile Cys Phe Met Ser Phe Asp Leu Tyr Leu Met Cys  
 20 25 30  
 Cys Asn Ile Met Ile Tyr Gly Phe Lys Ser Asn Val Asn Gln Gly Leu  
 35 40 45  
 Leu Arg Lys Arg Asp Val Ile Gly Leu Leu Lys Asn Glu Glu Ile Ile  
 50 55 60  
 Ser Asn Lys Ile Phe Asn Ile Phe Ile Asn Glu Glu Leu Asp Leu Leu  
 65 70 75 80  
 Tyr

<210> 8051  
 <211> 317  
 <212> PRT  
 <213> B.fragilis

<400> 8051  
 Ile Tyr Lys Asn Met Ala Tyr Ile Asp Tyr Tyr Lys Ile Leu Gly Val  
 1 5 10 15  
 Asp Lys Asn Ala Ser Gln Asp Asp Ile Lys Lys Ala Phe Arg Lys Leu  
 20 25 30  
 Ala Arg Lys Tyr His Pro Asp Leu Asn Pro Asn Asp Pro Ser Ala Lys  
 35 40 45  
 Asp Lys Phe Gln Glu Ile Asn Glu Ala Asn Glu Val Leu Ser Asp Pro

50 55 60  
 Glu Lys Arg Lys Lys Tyr Asp Glu Tyr Gly Glu His Trp Lys His Ala  
 65 70 75 80  
 Asp Glu Phe Glu Ala Gln Lys Lys Ala Arg Gln His Thr Gly Gly Gly  
 85 90 95  
 Gly Gly Gly Phe Ser Gly Phe Gly Gly Asp Gly Gly Ser Tyr Trp Tyr  
 100 105 110  
 Ser Ser Asp Gly Glu Gly Phe Ser Gly Gly Asp Ala Gly Gly Phe Ser  
 115 120 125  
 Asp Phe Phe Glu Ser Met Phe Gly His Arg Gly Gly Gly Arg Gly  
 130 135 140  
 Asn Ala Gly Phe Arg Gly Gln Asp Phe Asn Ala Glu Leu His Leu Ser  
 145 150 155 160  
 Leu Arg Asp Ala Ala Arg Thr His Lys Gln Val Leu Asn Val Asn Gly  
 165 170 175  
 Lys Gln Val Arg Ile Thr Ile Pro Ala Gly Val Ala Asp Gly Gln Val  
 180 185 190  
 Ile Lys Leu Lys Gly Tyr Gly Gly Glu Gly Ile Asn Gly Gly Pro Ala  
 195 200 205  
 Gly Asp Leu Tyr Ile Thr Phe Lys Ile Ala Glu Asp Ser Val Phe Lys  
 210 215 220  
 Arg Leu Gly Asp Asp Leu Tyr Val Asp Val Glu Met Asp Leu Tyr Thr  
 225 230 235 240  
 Ala Val Leu Gly Gly Glu Lys Val Ile Asp Thr Leu Glu Gly Lys Val  
 245 250 255  
 Lys Leu Lys Ile Lys Pro Glu Thr Gln Asn Gly Thr Lys Val Arg Leu  
 260 265 270  
 Lys Gly Lys Gly Phe Pro Val Tyr Lys Lys Glu Gly Gln Phe Gly Asp  
 275 280 285  
 Leu Ile Ile Thr Tyr Ser Val Lys Ile Pro Thr Asn Leu Thr Asp Arg  
 290 295 300  
 Gln Lys Glu Leu Phe Arg Glu Leu Gln Gln Ser Met Asn  
 305 310 315

<210> 8052

<211> 344

<212> PRT

<213> B.fragilis

<400> 8052

Glu Glu Arg Lys Asp Met Asn Asn Leu Phe Val Tyr Cys Glu Ile Glu  
 1 5 10 15  
 Asp Gly Ile Val Ala Asp Val Ser Leu Glu Leu Leu Thr Lys Gly Arg  
 20 25 30  
 Ser Leu Ala Asn Gln Leu Gly Cys Gln Leu Glu Ala Val Val Ala Gly  
 35 40 45  
 Thr Gly Leu Lys Asp Ile Glu Lys Gln Ile Leu Pro Tyr Gly Val Asp  
 50 55 60  
 Lys Leu His Val Phe Asp Gly Glu Gly Leu Tyr Pro Tyr Thr Ser Leu  
 65 70 75 80  
 Pro His Ile Ser Ile Leu Val Asn Leu Phe Lys Glu Glu Gln Pro Gln  
 85 90 95  
 Ile Cys Leu Met Gly Ala Thr Val Ile Gly Arg Asp Leu Gly Pro Arg  
 100 105 110  
 Val Ser Ser Ala Leu Thr Ser Gly Leu Thr Ala Asp Cys Thr Ser Leu  
 115 120 125  
 Glu Ile Gly Asp His Glu Asp Lys Lys Glu Gly Lys Val Tyr Lys Asn  
 130 135 140  
 Leu Leu Tyr Gln Ile Arg Pro Ala Phe Gly Gly Asn Ile Val Ala Thr

145 150 155 160  
 Ile Val Asn Pro Glu His Arg Pro Gln Met Ala Thr Val Arg Glu Gly  
 165 170 175  
 Val Met Lys Lys Ala Ile Leu Ala Ala Asp Tyr Lys Gly Glu Val Ile  
 180 185 190  
 His His Asp Val Lys Lys Tyr Val Ala Asp Thr Asp Tyr Val Val Lys  
 195 200 205  
 Val Ile Glu Arg His Val Glu Lys Ala Lys Asn Asn Leu Lys Gly Ser  
 210 215 220  
 Pro Ile Ile Ile Ala Gly Gly Tyr Gly Val Gly Ser Lys Glu Asn Phe  
 225 230 235 240  
 Asn Leu Leu Phe Asp Leu Ala Lys Val Leu Asn Ala Glu Val Gly Ala  
 245 250 255  
 Ser Arg Ala Ala Val Asp Ala Gly Phe Val Glu His Asp Arg Gln Ile  
 260 265 270  
 Gly Gln Thr Gly Val Thr Val Arg Pro Lys Leu Tyr Ile Ala Cys Gly  
 275 280 285  
 Ile Ser Gly Gln Ile Gln His Ile Ala Gly Met Gln Glu Ser Gly Ile  
 290 295 300  
 Ile Ile Ser Ile Asn Asn Asp Pro Ser Ala Pro Ile Asn Thr Ile Ala  
 305 310 315 320  
 Asp Tyr Val Ile Asn Gly Thr Ile Glu Glu Val Val Pro Lys Met Ile  
 325 330 335  
 Lys Tyr Tyr Lys Gln Asn Ser Lys  
 340

<210> 8053  
 <211> 628  
 <212> PRT  
 <213> B.fragilis

<400> 8053  
 His Ile Met Lys Ile Asn Lys Leu Leu Tyr Ala Gly Ala Ala Leu Thr  
 1 5 10 15  
 Leu Leu Gly Ala Cys Ala Pro Ala Val Lys Ala Pro Glu Ala Ile Leu  
 20 25 30  
 Pro Val Pro Glu Glu Lys Gln Val Asp Trp Gln Lys Met Glu Thr Tyr  
 35 40 45  
 Ala Phe Val His Phe Gly Leu Asn Thr Phe Asn Asp Arg Glu Trp Gly  
 50 55 60  
 Tyr Gly Asp Ser Glu Pro Lys Thr Phe Asn Pro Thr Lys Leu Asp Cys  
 65 70 75 80  
 Glu Gln Trp Val Lys Thr Phe Val Glu Ser Gly Met Lys Gly Val Ile  
 85 90 95  
 Leu Thr Ala Lys His His Asp Gly Phe Cys Leu Trp Pro Thr Gln Leu  
 100 105 110  
 Thr Glu Tyr Cys Ile Arg Asn Thr Pro Tyr Lys Asp Gly Lys Gly Asp  
 115 120 125  
 Ile Val Gly Glu Leu Ala Ala Cys Lys Lys Tyr Gly Ile Lys Phe  
 130 135 140  
 Ala Val Tyr Leu Ser Pro Trp Asp Arg His Gln Ala Asn Tyr Gly Thr  
 145 150 155 160  
 Pro Glu Tyr Val Asp Tyr Phe His Lys Gln Leu Thr Glu Leu Met Thr  
 165 170 175  
 Asn Tyr Gly Glu Val Phe Glu Val Trp Phe Asp Gly Ala Asn Gly Gly  
 180 185 190  
 Asp Gly Trp Tyr Gly Gly Ala Lys Asp Ser Arg Thr Ile Asp Arg Lys  
 195 200 205  
 Thr Tyr Tyr Asn Tyr Pro Arg Ile Tyr Glu Ile Leu Asp Lys Leu Gln

210	215	220
Pro Gln Ala Ile Val	Phe Ser Asp Gly Gly	Pro Gly Cys Arg Trp Val
225	230	235
Gly Asn Glu Asn Gly	Phe Ala Gly Ala Thr	Asn Trp Ser Phe Leu Arg
245	250	255
Ala Gly Glu Val Tyr	Pro Gly Tyr Pro Lys Tyr	Arg Glu Leu Gln Tyr
260	265	270
Gly His Ala Asp Gly	Asn Gln Trp Val Pro	Ala Glu Cys Asp Val Ser
275	280	285
Ile Arg Pro Gly Trp	Phe Tyr His Pro Glu Glu	Asp Asp Arg Val Lys
290	295	300
Thr Val Glu Gln Leu	Thr Asp Leu Tyr Tyr	Arg Ser Val Gly His Asn
305	310	315
Ala Thr Leu Leu Leu	Asn Phe Pro Val Asp	Arg Asp Gly Leu Ile His
325	330	335
Pro Ile Asp Ser Ala	Asn Ala Val Asn Phe	His Lys Asn Val Gln Lys
340	345	350
Gln Leu Ala His Asn	Leu Phe Ala Gly Ile	Arg Pro Lys Ala Ser Asp
355	360	365
Glu Arg Gly Gly Gln	Phe Ser Ala Lys Ala	Ala Thr Asp Glu Ser Trp
370	375	380
Asp Thr Tyr Trp Ala	Thr Asn Asp Gly Val	Thr Ala Ala Asp Ile Glu
385	390	395
Phe Asp Phe Pro Lys	Thr Glu Lys Val Asn	Arg Met Met Ile Gln Glu
405	410	415
Tyr Ile Pro Leu Gly	Gln Arg Val Lys Ser	Phe Ile Val Glu Tyr Asp
420	425	430
Lys Asp Gly Lys Trp	Leu Pro Val Lys Leu	Asn Glu Glu Thr Thr Thr
435	440	445
Val Gly Tyr Lys Arg	Leu Leu Arg Phe Glu	Thr Val Ser Thr Asp Lys
450	455	460
Leu Arg Ile Arg Phe	Thr Asp Ala Arg Ala	Cys Leu Cys Ile Asn Asn
465	470	475
Ile Glu Ala Tyr Tyr	Ala Gly Glu Thr Ala	Asp Thr Phe Thr Val Glu
485	490	495
Ala Lys Glu Leu Lys	Ser Tyr Pro Phe Thr	Leu Val Gly Val Pro Glu
500	505	510
Glu Glu Thr Lys Lys	Cys Met Asp Lys Asp	Lys Asn Thr Thr Ala Phe
515	520	525
Val Glu Gly Asp Ala	Leu Val Ile Asp Leu	Gly Glu Arg Thr Ile
530	535	540
Thr Ser Phe His Tyr	Leu Pro Asp Gln Ser	Glu Tyr Asn Lys Gly Leu
545	550	555
Ile Ser Ser Tyr Glu	Leu Ser Val Gly Thr	Glu Ala Asn Ala Val Asn
565	570	575
Arg Ile Val Ala Gln	Gly Glu Phe Ser Asn	Ile Lys Asn Asn Pro Ile
580	585	590
Leu Gln Ser Val Tyr	Phe Thr Pro Val Lys	Ala Arg Tyr Leu Ser Leu
595	600	605
Lys Pro Thr Lys Met	Val Thr Glu Gly Glu	Thr Met Gly Phe Ala Glu
610	615	620
Ile Gly Ile Gln		
625		

&lt;210&gt; 8054

&lt;211&gt; 70

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8054

Gly Tyr Thr Leu Thr Gly Asn Arg Asn Pro Cys Ile Ala Leu Tyr Asn  
 1 5 10 15  
 Leu Phe Ile Cys Asp Lys Leu Pro Ala His Ala Gln Lys Glu Leu His  
 20 25 30  
 Gln Pro Asn Ile Arg Ser Leu Thr Ala Asp Thr Asn Leu Val Asn Ile  
 35 40 45  
 Phe Cys Lys Ser Phe Leu Ile Val Ile Ser His Arg Tyr Ile Tyr Ile  
 50 55 60  
 Leu Ile Glu Asn Asp Ala  
 65 70

&lt;210&gt; 8055

&lt;211&gt; 62

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8055

Val Lys His Cys Lys Thr Lys Thr Thr Thr Gly Leu Lys Val Ser Phe  
 1 5 10 15  
 Thr Thr Asp Glu Gln Ile Tyr Lys Asp Ile His Leu Gln Ala Thr Glu  
 20 25 30  
 Ile Pro Val Leu Pro Tyr Thr Ile Cys Ser Ser Val Ile Asn Phe Arg  
 35 40 45  
 His Met Leu Lys Lys Ser Phe Thr Asn Leu Thr Ser Gly His  
 50 55 60

&lt;210&gt; 8056

&lt;211&gt; 435

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8056

Lys Gln Tyr Cys Asp Asn Glu Asn Lys Thr Leu Lys Tyr Ser Ser Lys  
 1 5 10 15  
 Asp Arg Arg Ser Phe Pro Tyr Leu Gly Ile Phe Ser Tyr Leu Cys Arg  
 20 25 30  
 Ile Asn Ile Asn Lys Asn Asp Ile Met Lys Lys Thr Ile Leu Leu  
 35 40 45  
 Ala Ala Leu Gly Leu Ile Ser Leu Ser Ala Leu Gly Gln Asp Lys Pro  
 50 55 60  
 Gln Glu Glu Gly Phe Val Phe Thr Thr Val Lys Glu Asn Pro Ile Thr  
 65 70 75 80  
 Ser Ile Lys Asn Gln Asn Arg Ser Ser Thr Cys Trp Ser Phe Ser Ser  
 85 90 95  
 Leu Gly Phe Leu Glu Ser Glu Leu Leu Arg Thr Gly Lys Gly Glu Tyr  
 100 105 110  
 Asp Leu Ser Glu Met Phe Val Val His His Thr Met Val Asp Arg Ala  
 115 120 125  
 Val Asn Tyr Val Arg Tyr His Gly Asp Ser Ser Phe Ser Pro Gly Gly  
 130 135 140  
 Ser Phe Tyr Asp Ile Met Phe Cys Met Lys Asn Tyr Gly Leu Val Pro  
 145 150 155 160  
 Gln Asp Ala Met Pro Gly Ile Met Tyr Gly Asp Ser Leu Pro Val His  
 165 170 175  
 Asn Glu Leu Asp Ala Thr Ala Gly Ala Tyr Val Asn Ala Ile Ala Lys  
 180 185 190  
 Gly Asn Leu Lys Lys Leu Thr Pro Val Trp Lys Lys Gly Leu Cys Ala  
 195 200 205

Ile Tyr Asp Thr Tyr Leu Gly Gln Cys Pro Glu Lys Phe Thr Tyr Lys  
 210 215 220  
 Gly Lys Glu Tyr Thr Pro Met Thr Phe Ala Gln Ser Leu Gly Leu Asn  
 225 230 235 240  
 Pro Asp Asp Tyr Val Ser Leu Thr Ser Tyr Thr His His Pro Phe Tyr  
 245 250 255  
 Ser Gln Phe Ala Ile Glu Ile Gln Asp Asn Trp Arg Asn Gly Leu Ser  
 260 265 270  
 Tyr Asn Leu Pro Leu Asp Glu Phe Met Ala Val Met Asp Asn Ala Val  
 275 280 285  
 Lys Asn Gly Tyr Thr Phe Ala Trp Gly Ser Asp Val Ser Glu Glu Gly  
 290 295 300  
 Phe Thr Arg Asp Gly Ile Ala Val Val Pro Asp Ala Ala Lys Gly Ala  
 305 310 315 320  
 Glu Leu Thr Gly Ser Asp Met Ala Arg Trp Thr Gly Met Thr Ala Ala  
 325 330 335  
 Asp Lys Arg Lys Glu Leu Thr Ser Lys Pro Leu Pro Glu Met Lys Ile  
 340 345 350  
 Thr Gln Glu Met Arg Gln Thr Ala Phe Asp Asn Trp Glu Thr Thr Asp  
 355 360 365  
 Asp His Gly Met Ile Ile Tyr Gly Ile Ala Lys Asp Gln Asn Gly Lys  
 370 375 380  
 Glu Tyr Phe Met Val Lys Asn Ser Trp Gly Thr Asn Asn Lys Tyr Lys  
 385 390 395 400  
 Gly Thr Trp Tyr Ala Ser Lys Ala Phe Val Ala Tyr Lys Thr Met Asn  
 405 410 415  
 Ile Leu Val His Lys Asp Ala Leu Pro Lys Asp Ile Ala Lys Lys Leu  
 420 425 430  
 Gly Ile Lys  
 435

<210> 8057  
 <211> 62  
 <212> PRT  
 <213> B.fragilis

<400> 8057  
 Ala Gly Lys Leu Asn Ala Pro Ala Ser Lys Ser Arg Val Thr Cys Leu  
 1 5 10 15  
 Val Ile Phe Asn Ile Thr Ile Leu Phe Trp Val Asn Asn Lys Gly Phe  
 20 25 30  
 Val Trp Phe Phe Tyr Ile Leu Pro Phe Leu Leu Ile Ile Leu Ser Tyr  
 35 40 45  
 Phe Phe Lys Asn Gly Leu Val Leu Ala Glu Leu Gly Glu Met  
 50 55 60

<210> 8058  
 <211> 250  
 <212> PRT  
 <213> B.fragilis

<400> 8058  
 Lys Pro Leu Arg Thr Leu Val Phe Leu Phe Gly Val Ser Gly Thr Ile  
 1 5 10 15  
 Asn Lys Ile Tyr Val Lys Asp Gly Ala Gln Val Arg Ala Gly Gln Leu  
 20 25 30  
 Leu Ala Glu Leu Asp Pro Thr Asp Tyr Gln Val Gln Leu Asp Ala Thr  
 35 40 45  
 Glu Ala Glu Tyr Arg Gln Val Lys Ala Glu Ala Glu Arg Val Met Ala

50	55	60
Leu Tyr Lys Glu Asn Gly Thr Thr Pro Asn Ala Asn Asp Lys Ala Val		
65	70	75
Tyr Gly Leu Lys Gln Ile Thr Ala Lys Tyr Lys His His Gln Asp Gln		80
	85	90
Leu Ala Tyr Thr Arg Leu Tyr Ala Pro Phe Ser Gly Tyr Val Gln Lys		95
	100	105
Arg Leu Phe Glu Ala His Glu Thr Ile Gly Ala Gly Met Pro Val Ile		110
	115	120
Ser Met Val Ser Ala Gly Ala Pro Glu Val Glu Ile Asn Leu Pro Ala		125
	130	135
Ala Glu Tyr Ile Arg Arg Asn Arg Phe Asn Arg Tyr His Cys Thr Phe		140
	145	150
Asp Ile Tyr Pro Gly Glu Thr Tyr Pro Leu Gln Leu Ile Ser Val Thr		155
	165	170
Pro Lys Ala Asn Ala Asn Gln Leu Tyr Thr Met Arg Leu Gln Leu Ile		175
	180	185
Pro Gly Lys Gln Ala Val Pro Ser Pro Gly Met Asn Ala Met Val Thr		190
	195	200
Ile Phe Cys Asp Thr Asp Arg Ser Gly Thr Leu Ser Val Pro Thr Ser		205
	210	215
Ala Ile Leu Gln Lys Asp Gly Lys Ser Tyr Val Phe Ile Tyr Asn Glu		220
	225	230
Pro His Arg Arg Arg Ala Arg Thr Asn Leu		235
	245	250

&lt;210&gt; 8059

&lt;211&gt; 323

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8059

Ile Cys Arg Leu Ile Val Asn Arg Ile Val Asn Ser Lys Asn Leu Thr		
1	5	10
Thr Asp Tyr Trp Leu Leu Thr Cys Arg Asn Thr Asn Thr Lys Ile Asn		15
	20	25
Asn Met Ser Leu Lys Ile Val Val Leu Ala Lys Gln Val Pro Asp Thr		30
	35	40
Arg Asn Val Gly Lys Asp Ala Met Lys Ala Asp Gly Thr Ile Asn Arg		45
	50	55
Ala Ala Leu Pro Ala Ile Phe Asn Pro Glu Asp Leu Asn Ala Leu Glu		60
	65	70
Gln Ala Leu Arg Leu Lys Asp Ala His Pro Gly Ser Thr Val Thr Ile		75
	85	90
Leu Thr Met Gly Pro Gly Arg Ala Ala Asp Ile Ile Arg Glu Gly Leu		95
	100	105
Phe Arg Gly Ala Asp Asn Gly Tyr Leu Leu Thr Asp Arg Ala Phe Ala		110
	115	120
Gly Ala Asp Thr Leu Ala Thr Ser Tyr Ala Leu Ala Thr Ala Ile Lys		125
	130	135
Lys Ile Gly Glu Tyr Asp Ile Ile Ile Gly Gly Arg Gln Ala Ile Asp		140
	145	150
Gly Asp Thr Ala Gln Val Gly Pro Gln Val Ala Glu Lys Leu Gly Leu		155
	165	170
Thr Gln Ile Thr Tyr Ala Glu Glu Ile Leu Lys Val Gly Asp Gly Ser		175
	180	185
Ile Thr Val Lys Arg His Ile Asp Gly Gly Val Glu Thr Val Glu Gly		190
	195	200
Pro Leu Pro Ile Val Ile Thr Val Asn Gly Ser Ala Ala Pro Cys Arg		205

210	215	220
Pro Arg Asn Ala Lys	Leu Val Gln Lys Tyr Lys	His Ala Lys Thr Ile
225	230	235
Thr Glu Lys Gln Gln Gly	Asn Leu Asp Tyr Thr	Asp Leu Tyr Asp Thr
	245	250
Arg Asp Tyr Leu Asn Leu	Val Glu Trp Ser Val	Ala Asp Val Asn Gly
	260	265
Asp Leu Lys Gln Cys Gly	Leu Ser Gly Ser Pro	Thr Lys Val Lys Ala
	275	280
Ile Gln Asn Ile Val Phe	Gln Ala Lys Glu Ser	Lys Thr Ile Ser Gly
	290	295
Ser Asp Arg Glu Val Glu	Glu Leu Ile Val Glu	Leu Leu Glu Asn His
305	310	315
Thr Ile Gly		320

<210> 8060  
 <211> 1348  
 <212> PRT  
 <213> B.fragilis

<400> 8060

Ser Ile Lys Arg Lys Thr Ile Met Arg Lys Ile Thr Leu Gly Leu Ile	
1 5 10 15	
Leu Cys Ser Met Val Thr Leu Cys Phe Ala Gly Gln Arg Pro Leu Glu	
20 25 30	
Gly Phe Lys Tyr Ala Ser Glu Lys Ala Pro Val Gly Asn Glu Trp Glu	
35 40 45	
Ser Pro Glu Asn Ile Ala Leu Asn Lys Glu Gln Pro Arg Ala Trp Phe	
50 55 60	
Phe Ser Phe Gln Asp Val Glu Ser Ala Arg Lys Val Leu Pro Glu Asn	
65 70 75 80	
Ser Lys Tyr Trp Leu Ser Leu Asn Gly Asp Trp Lys Phe Asn Trp Ala	
85 90 95	
Pro Asp Pro Asp Ser Arg Pro Lys Asp Phe Tyr Gln Thr Thr Phe Asp	
100 105 110	
Val Ser Gly Trp Asp Asn Ile Pro Val Pro Ser Ser Trp Asn Ile Tyr	
115 120 125	
Gly Ile Gln Lys Asp Gly Ser Leu Lys Tyr Gly Val Pro Ile Tyr Val	
130 135 140	
Asn Gln Pro Val Ile Phe Met His Lys Val Lys Val Asp Asp Trp Arg	
145 150 155 160	
Gly Gly Val Met Arg Thr Pro Pro Thr Asn Trp Thr Thr Tyr Lys Tyr	
165 170 175	
Arg Asn Glu Val Gly Ser Tyr Arg Arg Asp Phe Asp Ile Pro Gln Asp	
180 185 190	
Trp Asp Gly Arg Glu Val Phe Ile Asn Phe Asp Gly Val Asp Ser Phe	
195 200 205	
Phe Tyr Leu Trp Ile Asn Gly Gln Tyr Val Gly Phe Ser Lys Asn Ser	
210 215 220	
Arg Asn Thr Ala Ser Phe Asn Ile Thr Pro Tyr Leu Gln Lys Gly Lys	
225 230 235 240	
Asn Thr Val Ala Ala Glu Val Tyr Arg Ser Ser Asp Gly Ser Phe Leu	
245 250 255	
Glu Ala Gln Asp Met Phe Arg Leu Pro Gly Ile Phe Arg Thr Val Ala	
260 265 270	
Leu Tyr Ser Thr Pro Lys Val Gln Val Arg Asp Leu Val Val Ile Pro	
275 280 285	
Asp Leu Asp Glu Thr Tyr Thr Asn Gly Ser Leu Ala Ile Ser Ala Asp	



290	Ile	Arg	Asn	Phe	Gly	Lys	Lys	Ala	Ala	Lys	Gly	Tyr	Gln	Met	Ala	Tyr
305	Thr	Leu	Tyr	Ala	Asn	Lys	Leu	Tyr	Ser	Asp	Glu	Asn	Thr	Pro	Val	Ala
				325						330					335	
	Asn	Ala	Val	Ala	Ser	Ala	Thr	Val	Asn	Leu	Val	Asn	Pro	Asn	Glu	Thr
			340						345					350		
	Val	Glu	Ala	Glu	Lys	Ala	Ile	Met	Asn	Val	Gln	Ser	Pro	Asn	Lys	Trp
		355						360					365			
	Ser	Ala	Glu	Phe	Pro	His	Leu	Tyr	Thr	Leu	Val	Ala	Glu	Leu	Lys	Asp
		370					375					380				
	Lys	Lys	Gly	Lys	Thr	Ile	Glu	Thr	Val	Ser	Thr	Thr	Val	Gly	Phe	Arg
385						390					395					400
	Lys	Val	Glu	Ile	Lys	Asp	Thr	Pro	Ala	Ser	Ala	Asp	Glu	Phe	Gly	Leu
				405					410						415	
	Ala	Gly	Arg	Tyr	Tyr	Tyr	Val	Asn	Gly	Lys	Thr	Val	Lys	Leu	Lys	Gly
			420					425						430		
	Val	Asn	Arg	His	Glu	Ser	Asn	Pro	Ala	Val	Gly	His	Ala	Ile	Thr	Arg
		435						440				445				
	Glu	Met	Met	Glu	Lys	Glu	Val	Met	Leu	Met	Lys	Arg	Ala	Asn	Ile	Asn
		450					455					460				
	His	Val	Arg	Asn	Ser	His	Tyr	Pro	Asp	Asp	Pro	Tyr	Trp	Tyr	Tyr	Leu
465						470					475					480
	Cys	Asn	Lys	Tyr	Gly	Leu	Tyr	Leu	Glu	Asp	Glu	Ala	Asn	Ile	Glu	Ser
				485					490						495	
	His	Glu	Tyr	Tyr	Tyr	Gly	Ala	Ala	Ser	Leu	Ser	His	Pro	Val	Glu	Trp
			500						505					510		
	Lys	Asn	Ala	His	Val	Ala	Arg	Val	Met	Glu	Met	Val	His	Ala	Asn	Val
		515						520					525			
	Asn	Asn	Pro	Ser	Ile	Val	Ile	Trp	Ser	Leu	Gly	Asn	Glu	Ala	Gly	Pro
		530					535					540				
	Gly	Lys	Asn	Phe	Val	Ala	Ala	Tyr	Asp	Ala	Leu	Lys	Ala	Phe	Asp	Leu
545					550					555						560
	Ser	Arg	Pro	Val	Gln	Tyr	Glu	Arg	Asn	Asn	Asp	Ile	Val	Asp	Met	Gly
				565					570						575	
	Ser	Asn	Gln	Tyr	Pro	Ser	Ile	Gly	Trp	Met	Arg	Gly	Ala	Val	Lys	Gly
		580						585						590		
	Asn	Tyr	Asp	Ile	Lys	Tyr	Pro	Phe	His	Val	Ser	Glu	Tyr	Ala	His	Ser
		595					600						605			
	Met	Gly	Asn	Ala	Cys	Gly	Asn	Leu	Val	Asp	Tyr	Trp	Glu	Ala	Ile	Glu
		610					615					620				
	Ser	Thr	Asn	Phe	Phe	Cys	Gly	Gly	Ala	Ile	Trp	Asp	Trp	Val	Asp	Gln
625					630					635						640
	Ser	Met	Tyr	Asn	Tyr	Asp	Lys	Lys	Thr	Gly	Glu	Arg	Tyr	Leu	Ala	Tyr
				645					650						655	
	Gly	Gly	Asp	Phe	Gly	Asp	Thr	Pro	Asn	Asp	Gly	Gln	Phe	Val	Met	Asn
			660						665					670		
	Gly	Ile	Val	Phe	Gly	Asp	Leu	Glu	Pro	Lys	Pro	Gln	Tyr	Tyr	Glu	Val
		675						680					685			
	Lys	Lys	Val	Tyr	Gln	His	Ile	Asp	Val	Lys	Ala	Ile	Asp	Val	Glu	Lys
		690					695					700				
	Gly	Arg	Phe	Glu	Val	Phe	Asn	Lys	Tyr	Tyr	Phe	Lys	Asn	Leu	Ser	Asp
705					710						715					720
	Tyr	Asp	Val	Lys	Trp	Ser	Leu	Tyr	Glu	Asn	Gly	Lys	Glu	Ala	Gln	Ser
				725						730					735	
	Gly	Leu	Leu	Ser	Ile	Gly	Glu	Val	Ala	Pro	Arg	Thr	Arg	Thr	Gln	Ile
			740					745					750			
	Thr	Val	Pro	Tyr	Gln	Phe	Ser	Lys	Leu	Lys	Ala	Asp	Ser	Glu	Tyr	Phe
		755					760						765			

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Val Lys Ile Gln Phe Leu Leu Lys Asp Asn Met Pro Trp Ala Asp Lys  
 770 775 780  
 Asn Phe Ala Gln Ala Glu Glu Gln Ile Leu Val Lys Glu Ala Thr Ala  
 785 790 795 800  
 Arg Pro Ser Ile Ala Thr Val Ala Ala Glu Gly Asp Lys Pro Glu Val  
 805 810 815  
 Met Met Thr Lys Ala Ser Asp Ile Ile Thr Ile Lys Gly Asn Gly Tyr  
 820 825 830  
 Thr Ala Gln Phe Asp Ile Lys Thr Gly Thr Ile Tyr Ser Leu Thr Tyr  
 835 840 845  
 Gly Asn Glu Lys Val Ile Thr Asp Gly Asn Gly Pro Lys Leu Asp Ala  
 850 855 860  
 Leu Arg Ala Phe Thr Asn Asn Asp Asn Trp Phe Tyr Ser Gln Trp Phe  
 865 870 875 880  
 Asp Asn Gly Leu His Asn Leu Lys His Ser Ala Thr Gly Phe Asn Met  
 885 890 895  
 Thr Thr Lys Glu Asp Gly Thr Val Val Leu Ser Phe Thr Val Gln Ser  
 900 905 910  
 Gln Ala Pro Asn Ala Ala Lys Ile Leu Gly Gly Thr Ser Ser Gly Lys  
 915 920 925  
 Asn Lys Ile Glu Glu Leu Thr Asp Lys Lys Phe Gly Ser Ser Asp Phe  
 930 935 940  
 Lys Phe Thr Thr Asn Gln Val Trp Thr Val Tyr Lys Asp Gly Ser Ile  
 945 950 955 960  
 Glu Leu Glu Ala Ser Ile Thr Ser Asn Gln Pro Ser Leu Val Leu Pro  
 965 970 975  
 Arg Leu Gly Tyr Met Val Arg Val Pro Gln Gln Tyr Ala Asn Phe Thr  
 980 985 990  
 Tyr Tyr Gly Arg Gly Pro Ile Asp Asn Tyr Ala Asp Arg Lys Val Gly  
 995 1000 1005  
 Gln Phe Ile Glu Gln His Lys Asn Thr Val Ala Gly Glu Phe Val Asn  
 1010 1015 1020  
 Phe Pro Lys Pro Gln Asp Met Gly Asn His Glu Asp Val Arg Trp Cys  
 1025 1030 1035 1040  
 Ala Leu Thr Asn Asn Ala Gly Asn Gly Ala Val Phe Ile Ala Thr Asp  
 1045 1050 1055  
 Arg Leu Ser Thr Ser Ala Leu Pro Tyr Ser Ala Leu Asp Leu Ile Leu  
 1060 1065 1070  
 Ala Ser His Pro Tyr Gln Leu Pro Lys Ala Gly Asp Thr Tyr Leu His  
 1075 1080 1085  
 Leu Asp Ala Ala Val Thr Gly Leu Gly Gly Asn Ser Cys Gly Gln Gly  
 1090 1095 1100  
 Gly Pro Leu Glu Gln Asp Arg Val Phe Ala Ser His His Asn Thr Gly  
 1105 1110 1115 1120  
 Phe Ile Ile Arg Pro Ala Gly Lys Asp Leu Thr Val Thr Ala Asn Val  
 1125 1130 1135  
 Ala Pro Ala Gly Glu Met Pro Leu Ser Ile Thr Arg Asn Arg Ala Gly  
 1140 1145 1150  
 Val Val Ser Val Ser Ser Gln Lys Lys Asp Ala Val Ile Leu Tyr Thr  
 1155 1160 1165  
 Val Asp Lys Ser Lys Ser Lys Thr Tyr Thr Glu Pro Ile Ala Leu Arg  
 1170 1175 1180  
 Asn Gly Gly Thr Val Thr Ala Trp Phe Lys Asp Ala Pro Phe Ile Lys  
 1185 1190 1195 1200  
 Ala Ser Met Thr Phe Asp Lys Ile Glu Ser Ile Gln Thr Glu Val Ile  
 1205 1210 1215  
 Tyr Ala Ser Ser Glu Glu Ser Asp Gly Gly Glu Ala Lys Asn Leu Thr  
 1220 1225 1230  
 Asp Gly Asp Pro Asn Thr Ile Trp His Thr Met Phe Ser Val Thr Val

1235	1240	1245
Ala Lys His Pro His Trp	Val Asp Leu Asp	Ala Gly Glu Val Lys Thr
1250	1255	1260
Ile Lys Gly Phe Thr Tyr	Leu Pro Arg Gln Asp	Ser Ser Asn Gly Asn
1265	1270	1275
Val Lys Asp Tyr Thr Ile	His Val Ser Met Asp	Gly Lys Glu Trp Gly
	1285	1290
Glu Pro Ile Leu Lys Gly	Thr Phe Ala Arg Asp	Leu Lys Glu Lys Lys
	1300	1305
Val Met Phe Asp Lys Pro	Val Lys Ala Arg Tyr	Ile Arg Phe Thr Ala
	1315	1320
Leu Ser Glu Gln Arg Gly	Gln Asp Tyr Ala Ser	Gly Ala Glu Leu Thr
	1330	1335
Ile Leu Ala Glu		1340
1345		

&lt;210&gt; 8061

&lt;211&gt; 77

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8061

Glu Val Phe Gly Met Phe Met Val Trp Gly Phe Arg Gln Arg Ile Phe	
1 5 10 15	
Asp Ser Pro Leu Ser Ile Arg Lys Gly Ile Tyr Tyr Pro Leu Ser Lys	
20 25 30	
Glu Ala Gly Phe Lys Thr Ser Cys Leu Ser Pro Asn Lys Cys Thr Asn	
35 40 45	
Asn Ser Ile Ile Tyr Phe Phe Ala Arg Glu Ala Asp Arg Cys Val Phe	
50 55 60	
Ile Lys Glu Asp Ser Leu Thr Pro Gly Gln Asn Leu Trp	
65 70 75	

&lt;210&gt; 8062

&lt;211&gt; 406

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8062

Asp Lys Gly Gly Ile Phe Val Asn Arg His Ser Arg Arg Thr Phe Trp	
1 5 10 15	
Ser Met Lys Gln Ile Asn Lys Gln Lys Leu Leu Glu Gln Met Val Tyr	
20 25 30	
Leu Val Ile Trp Leu Thr Val Ile Ser Val Pro Leu Val Gly Asp Tyr	
35 40 45	
Leu Phe Ala Ser Ile Ser Pro Val His Thr Phe Ser Trp Gln Thr Ile	
50 55 60	
Arg Met Ala Trp Leu Leu Thr Leu Pro Phe Ile Leu Leu Phe Val Val	
65 70 75 80	
Asn Asn Tyr Phe Leu Ala Pro Arg Leu Leu Leu Arg Lys Arg Tyr Trp	
85 90 95	
Ala Tyr Ala Leu Ser Leu Ala Gly Val Thr Leu Leu Phe Ile Leu	
100 105 110	
Tyr Pro Ser Ile Asn Pro Pro Gln His Lys Gln Phe Gln Asn Leu Met	
115 120 125	
Pro Met Gln Pro Arg Arg Tyr Pro Glu Gly Lys Val Leu Pro Asp Arg	
130 135 140	
Glu Arg Glu Phe Pro Asn Thr Phe Pro Glu His Ser Ser Pro Leu Leu	
145 150 155 160	

Leu Pro Lys Gln Glu Leu Asp Met Arg Trp Arg Gly Pro His Pro Leu  
 165 170 175  
 Pro Gly Tyr Phe Leu Gly Arg Leu Ser Leu Ala Leu Leu Val Val Gly  
 180 185 190  
 Ile Asn Val Ala Ile Lys Leu Leu Phe Lys Ser Met Arg Asp Glu Glu  
 195 200 205  
 Ala Leu Lys Glu Leu Glu His Gln His Leu Gln Ser Glu Leu Gln Tyr  
 210 215 220  
 Leu Lys Tyr Gln Ile Asn Pro His Phe Phe Met Asn Thr Leu Asn Asn  
 225 230 235 240  
 Ile His Ala Leu Val Asp Met Asp Ala Gly Lys Ala Lys Arg Thr Ile  
 245 250 255  
 Val Glu Leu Ser Lys Leu Met Arg Tyr Val Leu Tyr Glu Ala Ser Asn  
 260 265 270  
 Arg Thr Ile Leu Leu Ser Arg Glu Ile Gln Phe Leu Asp Asn Tyr Ile  
 275 280 285  
 Ala Leu Met Lys Leu Arg Tyr Thr Gly Arg Val Arg Ile Glu Cys Cys  
 290 295 300  
 Met Pro Asp Glu Val Pro Glu Val Gln Ile Pro Pro Leu Leu Phe Ile  
 305 310 315 320  
 Ser Phe Val Glu Asn Ala Phe Lys His Gly Val Ser Tyr Gln Glu Glu  
 325 330 335  
 Ser Phe Ile Arg Val Phe Met Ser Val Glu Asp Gly Arg Leu Val Phe  
 340 345 350  
 Arg Cys Ser Asn Ser Asn His Gly Arg Ser Val Glu Gln His His Gly  
 355 360 365  
 Ile Gly Leu Glu Asn Ile Arg Lys Arg Leu Arg Leu Leu Phe Gly Gln  
 370 375 380  
 Asp Tyr Thr Leu Ser Ile Asn Glu Arg Asp Asp Ser Phe Asn Val Leu  
 385 390 395 400  
 Leu Ile Ile Pro Leu Leu  
 405

<210> 8063  
 <211> 106  
 <212> PRT  
 <213> B.fragilis

<400> 8063  
 Lys Ser Thr Met Gln Thr Glu Leu Ile Ile Val Ser Glu Tyr Cys His  
 1 5 10 15  
 Lys Cys His Ile Glu Pro Ser Phe Ile Asp Leu Leu Glu Glu Gly Gly  
 20 25 30  
 Leu Ile Glu Val Arg Thr Glu Gly Gly Glu His Tyr Leu Leu Ala Ser  
 35 40 45  
 Gln Leu Pro Asp Val Glu Arg Tyr Ser Arg Met Tyr Tyr Asp Leu Ser  
 50 55 60  
 Ile Asn Met Glu Gly Ile Asp Ala Ile His His Leu Leu Glu Arg Met  
 65 70 75 80  
 Glu Ile Met Arg Arg Glu Ile Ser Ser Leu Arg Asn Gln Leu Ile Val  
 85 90 95  
 Phe Lys Arg Glu Gly Ile Met Glu Asp Trp  
 100 105

<210> 8064  
 <211> 587  
 <212> PRT  
 <213> B.fragilis

&lt;400&gt; 8064

Pro Ile His Ile Ser Asp Ala Lys Ile Ile Ile Cys Trp Phe Lys Ser  
 1 5 10 15  
 His Ile Leu Asn Thr Lys His Leu Met Lys Ile Lys Tyr Leu Phe Tyr  
 20 25 30  
 Ile Gly Val Ala Thr Leu Ala Leu Ser Gly Cys Asn Asp Gly Phe Leu  
 35 40 45  
 Glu Arg Ala Pro Glu Ala Ile Asn Asp Lys Thr Phe Trp Asn Thr Thr  
 50 55 60  
 Gly Asp Leu Glu Thr Tyr Ala Asn Gln Phe Tyr Ser Tyr Leu Pro Gly  
 65 70 75 80  
 Gly Val Thr Ser Ile Ala Asp Gly Glu Ser Asp Asn Gln Val Pro Asn  
 85 90 95  
 Ser Ile Pro Gln Phe Phe Trp Asn Gln Leu Ser Thr Pro Ala Glu Ala  
 100 105 110  
 Ala Ser Trp Cys Asn Trp Ser Lys Gly Gly Trp Gln Pro Ile Arg Leu  
 115 120 125  
 Val Asn Tyr Phe Leu Thr His Tyr Gln Thr Val Ser Gly Lys Glu Ser  
 130 135 140  
 Glu Ile Asn Gln Tyr Val Ala Glu Val Arg Phe Phe Lys Ala Met Gln  
 145 150 155 160  
 Tyr Ala Gly Leu Met Arg Thr Phe Gly Asp Ile Pro Trp Leu Asp Lys  
 165 170 175  
 Asp Leu Gly Thr Gly Asp Thr Asp Ile Leu Tyr Gly Pro Lys Leu Lys  
 180 185 190  
 Arg Tyr Glu Val Met Asp Lys Ile Ile Glu Glu Phe Asp Phe Ala Ile  
 195 200 205  
 Gln Trp Leu Pro Glu Lys Pro Ala Thr Gly Arg Ile Gly Lys Asp Val  
 210 215 220  
 Ala Arg Gln Leu Lys Ala Arg Thr Cys Leu His Glu Gly Thr Tyr Tyr  
 225 230 235 240  
 Lys Tyr His Thr Glu Leu Gly Trp Ala Asp Lys Ala Asp Arg Leu Leu  
 245 250 255  
 Lys Met Ala Ala Asp Glu Thr Asp Ala Ile Met Ala Thr Gly Lys Tyr  
 260 265 270  
 Glu Ile Tyr Asn Thr Gly His Pro Glu Lys Asp Tyr Tyr Asp Val Phe  
 275 280 285  
 Val Met Glu Asp Lys Thr Asn Leu Lys Glu Ala Ile Leu Pro Val Thr  
 290 295 300  
 Tyr Leu Asp Gly Lys Arg Lys His Gly Met Ser Arg Thr Leu Ala Glu  
 305 310 315 320  
 Ala Asn Thr Gly Phe Ser Lys Asp Phe Val Glu Ser Tyr Leu Cys Leu  
 325 330 335  
 Asn Gly Lys Pro Ile Thr Gly Asn Asp Gln Tyr Lys Gly Asp Thr Asn  
 340 345 350  
 Met Lys Asp Glu Thr Thr Asp Arg Asp Pro Arg Leu Lys Gln Thr Ile  
 355 360 365  
 Leu Thr Trp Asp Phe Pro Thr Arg Val Thr Val Ala Thr Asn Asp Ser  
 370 375 380  
 Thr Tyr Ile Glu Lys Glu Glu Asp Phe Ile Ser Gln Tyr Cys Leu Thr  
 385 390 395 400  
 Gly Tyr Lys Ser Ile Lys Tyr Phe Ile Pro Thr Asp Lys Ala Phe Glu  
 405 410 415  
 Ala Asn Asn Asn Thr Tyr Asp Gly Ile Ala Tyr Arg Tyr Ala Glu Thr  
 420 425 430  
 Leu Leu Ile Asn Ala Glu Ala Lys Ala Glu Leu Gly Thr Ile Thr Gln  
 435 440 445  
 Ala Asp Leu Asn Lys Thr Ile Asn Val Leu Arg Asp Arg Ala Gly Met  
 450 455 460

Pro His Leu Thr Leu Glu Val Gly Phe Thr Asp Pro Asn Trp Pro Ala  
 465 470 475 480  
 Trp Gly Tyr Ser Leu Thr Pro Leu Leu Gln Glu Ile Arg Arg Glu Arg  
 485 490 495  
 Arg Ile Glu Leu Ala Gly Glu Gly Phe Arg Trp Asp Asp Leu Ala Arg  
 500 505 510  
 Trp Lys Ala Gly Ala Ile Cys Asn Asn Val Lys Thr Tyr Ile Gly Lys  
 515 520 525  
 Arg Glu Pro Tyr Lys Glu Gly Gln Tyr Ala Ile Val Tyr Pro Ala Tyr  
 530 535 540  
 Thr Asn Asp Asn Tyr Ser Tyr Glu Ala Gly Lys Ser Arg Thr Trp Asn  
 545 550 555 560  
 Asp Arg Leu Tyr Leu Arg Pro Ile Pro Thr Gly Glu Leu Gln Arg Asn  
 565 570 575  
 Asp Asn Leu Leu Pro Gln Asn Pro Gly Trp Glu  
 580 585

<210> 8065  
 <211> 62  
 <212> PRT  
 <213> B.fragilis

<400> 8065  
 Gln Pro Val Val Ser Ser Lys Val Leu Ala Ile His Tyr Pro Val Asn  
 1 5 10 15  
 Tyr Gln Pro Ala Asn Leu Ser Lys Arg Leu Val Leu Thr Arg Asn Leu  
 20 25 30  
 Ser Glu Lys Cys Thr Ser Leu Arg Ile Leu Ser Asn Leu Ser Asp Ser  
 35 40 45  
 Tyr Asp His Glu Tyr Arg Val Ile Val Asn Phe Gln Ile Phe  
 50 55 60

<210> 8066  
 <211> 66  
 <212> PRT  
 <213> B.fragilis

<400> 8066  
 Met Gly Phe Ala Pro Met Asn Asn Pro Lys Ile Ala Ile Ala Val Tyr  
 1 5 10 15  
 Val Glu Asn Gly Gly Phe Gly Ala Val Tyr Gly Val Pro Ile Gly Ala  
 20 25 30  
 Leu Met Met Glu Gln Tyr Leu Lys Gly Lys Leu Ser Pro Glu Asn Glu  
 35 40 45  
 Ile Arg Ala Glu Glu Tyr Ser Asn Arg Val Ile Met Tyr Gly Asn Glu  
 50 55 60  
 Glu Arg  
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<210> 8067  
 <211> 437  
 <212> PRT  
 <213> B.fragilis

<400> 8067  
 Leu Cys Met Glu Thr Arg Ser Val Ser Leu Trp Lys Thr Leu Asp Trp  
 1 5 10 15  
 Val Thr Ile Val Ile Tyr Leu Leu Leu Ile Ile Gly Gly Trp Phe Ser  
 20 25 30

Val	Cys	Gly	Ala	Ser	Tyr	Asp	Tyr	Gly	Asp	Arg	Asp	Phe	Leu	Asp	Phe
	35						40					45			
Ser	Thr	Arg	Ala	Gly	Arg	Gln	Phe	Val	Trp	Ile	Ile	Cys	Ser	Phe	Gly
	50					55					60				
Leu	Gly	Phe	Ile	Leu	Leu	Met	Leu	Glu	Glu	Arg	Met	Tyr	Asp	Met	Phe
65					70					75					80
Ala	Tyr	Leu	Ile	Tyr	Ile	Gly	Met	Ile	Leu	Leu	Leu	Ile	Val	Thr	Ile
				85					90					95	
Phe	Ile	Ala	Pro	Asp	Thr	Lys	Gly	Ser	Arg	Ser	Trp	Leu	Ile	Leu	Gly
			100					105					110		
Pro	Val	Ser	Leu	Gln	Pro	Ala	Glu	Phe	Ala	Lys	Phe	Ala	Thr	Ala	Leu
		115					120					125			
Ala	Leu	Ala	Lys	Phe	Met	Asn	Ala	Tyr	Ser	Phe	Asn	Ile	Lys	Lys	Trp
	130					135					140				
Lys	Cys	Phe	Leu	Pro	Leu	Val	Ala	Phe	Ile	Leu	Leu	Pro	Met	Leu	Leu
145					150					155					160
Ile	Ile	Leu	Gln	Lys	Glu	Thr	Gly	Ser	Ala	Leu	Val	Tyr	Leu	Ala	Phe
			165						170					175	
Phe	Leu	Val	Leu	Tyr	Arg	Glu	Gly	Met	Pro	Gly	Val	Val	Leu	Phe	Ser
		180						185					190		
Gly	Val	Cys	Ala	Val	Val	Tyr	Phe	Val	Val	Gly	Ile	Arg	Phe	Asp	Gln
	195						200					205			
Val	Phe	Ile	Ala	Asp	Thr	Pro	Thr	Pro	Ile	Gly	Glu	Phe	Ala	Val	Leu
	210					215					220				
Leu	Met	Ile	Leu	Leu	Phe	Ala	Gly	Ser	Met	Val	Trp	Val	Tyr	Arg	Lys
225					230					235					240
Lys	Trp	Glu	Pro	Val	Arg	Asn	Met	Ile	Gly	Gly	Ser	Leu	Leu	Val	Leu
			245						250					255	
Leu	Ile	Ala	Tyr	Leu	Val	Ser	Glu	Tyr	Leu	Ser	Pro	Phe	Asn	Leu	Val
		260						265					270		
Trp	Val	Glu	Trp	Gly	Leu	Cys	Val	Val	Thr	Ile	Gly	Tyr	Leu	Leu	Tyr
	275					280						285			
Leu	Ser	Leu	Ser	Glu	Arg	Gln	Arg	Ala	Tyr	Leu	Leu	Ile	Gly	Leu	Phe
	290					295					300				
Ala	Leu	Gly	Ser	Ile	Gly	Phe	Leu	Tyr	Ser	Ser	Asp	Tyr	Val	Phe	Asp
305				310						315					320
Asn	Ile	Leu	Glu	Pro	His	Gln	Gln	Ile	Arg	Leu	Lys	Val	Val	Leu	Gly
			325						330					335	
Met	Glu	Glu	Asp	Leu	Ala	Gly	Pro	Gly	Ser	Asn	Leu	Asn	Gln	Ser	Lys
		340						345					350		
Ile	Ala	Ile	Gly	Ser	Gly	Gly	Leu	Thr	Gly	Lys	Gly	Phe	Leu	Asn	Gly
	355					360						365			
Thr	Gln	Thr	Arg	Leu	Lys	Tyr	Gly	Pro	Lys	Gln	Asn	Thr	Asp	Phe	Phe
	370					375					380				
Phe	Trp	Thr	Gly	Gly	Glu	Glu	Gln	Gly	Phe	Val	Val	Arg	Asp	Pro	Phe
385				390						395					400
Phe	Val	Phe	Leu	Gly	Val	Ile	Leu	Arg	Phe	Ile	Ala	Thr	Glu	Asn	Gly
			405						410					415	
Lys	Ile	Phe	Phe	Trp	Gly	Gly	Val	Met	Val	Phe	Arg	Val	Arg	Thr	Ile
		420						425					430		
Pro	Cys	Pro	Ile	Gly											
		435													

&lt;210&gt; 8068

&lt;211&gt; 346

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8068

Phe Ile Leu Thr Ala Pro Ser Ala Met Arg Cys Asn Thr Gly Pro Leu  
 1 5 10 15  
 Lys Asp Leu Met Ile Asp Gly Ile Ile Gly Gly Val Gly Gly Val Ile  
 20 25 30  
 Val Phe Leu Pro Asn Ile Leu Ile Leu Tyr Phe Cys Ile Ser Leu Met  
 35 40 45  
 Glu Asp Ser Gly Tyr Met Ala Arg Ala Ala Phe Ile Met Asp Lys Ile  
 50 55 60  
 Met His Lys Met Gly Leu His Gly Lys Ser Phe Ile Pro Leu Ile Met  
 65 70 75 80  
 Gly Phe Gly Cys Asn Val Pro Ala Ile Met Ala Ser Arg Thr Ile Glu  
 85 90 95  
 Asn Arg Lys Ser Arg Leu Ile Thr Met Leu Val Asn Pro Leu Met Ser  
 100 105 110  
 Cys Ser Ala Arg Leu Pro Ile Tyr Leu Leu Leu Val Gly Ala Phe Phe  
 115 120 125  
 Pro Lys Asn Gly Ser Leu Val Leu Leu Ala Ile Tyr Ala Ile Gly Ile  
 130 135 140  
 Ala Leu Ala Val Ile Met Ala Arg Leu Phe Ser Arg Phe Leu Val Lys  
 145 150 155 160  
 Gly Asp Asp Thr Pro Phe Val Met Glu Leu Pro Pro Tyr Arg Met Pro  
 165 170 175  
 Thr Met Lys Ser Ile Phe Arg His Thr Trp Glu Lys Gly Ala Gln Tyr  
 180 185 190  
 Leu Lys Lys Met Gly Gly Ile Ile Met Ile Ala Ser Ile Ile Ile Trp  
 195 200 205  
 Phe Leu Gly Tyr Tyr Pro Asp His Asp Ala Tyr Pro Thr Gln Ala Glu  
 210 215 220  
 Gln Gln Glu Asn Ser Tyr Ile Gly Gln Ile Gly Gln Ala Val Glu Pro  
 225 230 235 240  
 Val Leu Lys Pro Leu Gly Phe Asp Trp Lys Leu Ser Ile Gly Leu Leu  
 245 250 255  
 Ser Gly Val Gly Ala Lys Glu Leu Val Val Ser Thr Leu Gly Val Leu  
 260 265 270  
 Tyr Thr Asn Asp Ala Asp Ala Asp Val Val Ser Leu Ala Glu Arg Ile  
 275 280 285  
 Pro Ile Thr Pro Leu Ala Ala Phe Ser Tyr Met Leu Phe Val Leu Ile  
 290 295 300  
 Tyr Phe Pro Cys Ile Ala Thr Leu Val Ala Ile Lys Gln Glu Ser Gly  
 305 310 315 320  
 Ser Trp Lys Trp Ala Ile Phe Thr Ala Gly Tyr Thr Thr Ala Leu Ala  
 325 330 335  
 Trp Leu Val Ser Phe Ala Val Tyr Gln Ile  
 340 345

&lt;210&gt; 8069

&lt;211&gt; 94

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8069

Leu Glu Val Gly Tyr Leu His Gly Arg Ile Tyr His Gly Val Gly Met  
 1 5 10 15  
 Ala Cys Phe Ile Cys Arg Leu Ser Asp Met Arg Asn Val Phe Met Asn  
 20 25 30  
 Trp Gln Glu Trp Val Val Gly Leu Leu Ile Val Leu Cys Val Thr Arg  
 35 40 45  
 Ile Leu Tyr Gly Ile Tyr Leu Phe Phe Arg Arg Val Lys Glu Asn Asp  
 50 55 60



Asn	Pro	Cys	Ala	Ser	Cys	Ala	Ser	Gly	Cys	Glu	Leu	Lys	Asp	Met	Met
65					70				75					80	
Glu	Lys	Asn	Gln	Lys	Glu	Cys	Ser	Phe	Lys	Lys	Lys	Ile	Thr		
				85					90						

<210> 8070  
 <211> 830  
 <212> PRT  
 <213> B.fragilis

<400> 8070

Tyr	Ile	Lys	Ser	Ile	Cys	Tyr	Leu	Tyr	Ile	Cys	Val	Tyr	Lys	Tyr	Gly
1				5					10					15	
Ile	Thr	Met	Asn	Arg	His	Lys	Leu	Ala	Phe	Ser	Leu	Ile	Gly	Ile	Phe
			20					25					30		
Ile	Val	Gln	Leu	Ser	Tyr	Ala	Gly	Tyr	Phe	Lys	His	Ile	Gly	Arg	Glu
		35					40					45			
Glu	Gly	Leu	Ser	Gln	Ser	Ser	Val	Met	Ala	Ile	Tyr	Gln	Asp	Lys	Leu
	50				55						60				
Gly	Arg	Met	Trp	Phe	Gly	Thr	Arg	Glu	Gly	Val	Asn	Ile	Tyr	Asn	Ser
65				70					75					80	
Asn	Lys	Met	Ala	Val	Tyr	Lys	Ala	Trp	Ile	Gln	Asn	Gly	Asn	Arg	Pro
			85						90					95	
Asp	Gln	Lys	Ile	Leu	Ile	Gly	Asn	Glu	Val	Ser	Ala	Ile	Thr	Gly	Ser
		100					105						110		
Gln	Asn	Gly	Asp	Val	Phe	Leu	Ile	Val	Asp	His	Ala	Leu	Leu	Lys	Tyr
		115					120					125			
Asp	Ile	Arg	Lys	Glu	Thr	Phe	Glu	Arg	Leu	Arg	Gln	Gly	Ser	Val	Tyr
	130					135					140				
Ala	Leu	Thr	Ser	His	Ala	Gly	Glu	Ile	Trp	Cys	Ala	Gly	His	Asp	Ser
145				150						155				160	
Ile	Phe	Arg	Tyr	Asn	Pro	Gln	Asn	Asn	Gln	Leu	Asp	Phe	Gln	Leu	Lys
			165				170						175		
Thr	Gly	Ile	Ser	Ser	Ile	Asn	Tyr	Leu	Thr	Ile	Asn	Gly	Asn	Arg	Phe
		180					185						190		
Tyr	Ile	Gly	Ala	Lys	Glu	Gly	Leu	Tyr	Thr	Thr	Glu	Asn	Lys	Gly	Arg
	195						200					205			
Val	Gln	Cys	Leu	Ile	Pro	Lys	Val	Asp	Val	Tyr	Arg	Ile	Phe	Gln	Ser
	210					215					220				
Ser	Cys	Gln	Glu	Leu	Trp	Val	Gly	Cys	Arg	Thr	Gln	Gly	Leu	Tyr	Arg
225				230					235					240	
Ile	Asn	Arg	Asn	Gly	Arg	Ile	Asn	Arg	Ile	Pro	Tyr	Asp	Pro	Ser	Ser
			245				250							255	
Pro	Asn	Gly	Ile	Ser	Ser	Glu	Gln	Ile	Arg	Glu	Phe	Val	Glu	Asp	Gln
		260					265						270		
Gln	Gly	Asn	Ile	Trp	Phe	Gly	Thr	Phe	Asp	Gly	Leu	Gln	Lys	Tyr	Asp
		275					280					285			
Pro	Ser	Thr	Gln	Thr	Tyr	Ser	Leu	Ile	Lys	Gln	Glu	Gln	Arg	Pro	Gly
	290					295					300				
Gly	Leu	Ser	His	Ser	Ser	Ile	Phe	Ser	Leu	Tyr	Gln	Asp	Val	Gln	Gly
305				310						315				320	
Thr	Ile	Trp	Ile	Gly	Ser	Tyr	Tyr	Gly	Gly	Val	Asn	Tyr	Phe	Asn	Pro
			325					330						335	
Asp	Asn	Asn	Ala	Phe	Asn	Tyr	Tyr	Thr	Tyr	Asn	Pro	Asp	Arg	Ser	Asp
		340					345						350		
Cys	Leu	Asn	Tyr	Pro	Phe	Ala	Gly	Ala	Met	Thr	Glu	Asp	Lys	Asp	His
	355						360					365			
His	Leu	Trp	Ile	Cys	Thr	Asp	Gly	Gly	Gly	Leu	Ala	Cys	Leu	Asp	Arg
	370					375					380				

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Gln Ala Gly His Phe Thr Thr Tyr Thr Ala Gly Gly Pro Asn Ser Leu  
 385 390 395 400  
 Pro His Asn Asn Leu Lys Ser Ile Cys Tyr Asp Pro Lys Arg Asp Cys  
 405 410 415  
 Leu Tyr Ile Gly Thr His Met Gly Gly Leu Ser Arg Phe Asp Arg Lys  
 420 425 430  
 Thr Gly Arg Phe Tyr Asn Tyr Leu Asn His Ser Thr Lys Gly Leu Lys  
 435 440 445  
 Glu Pro Asn Asp Val Ile Phe Gln Val Ser Phe Tyr Asn Asp Gln Leu  
 450 455 460  
 Ile Val Ser Ala Arg Asn Gly Val Phe Ser Met Asn Pro Asp Thr Asn  
 465 470 475 480  
 Glu Phe Arg Leu Leu Tyr Asp Gly Tyr Tyr Tyr Gln Thr Phe Thr Ile  
 485 490 495  
 Asp Pro Lys Gly Phe Leu Trp Leu Ser Ala Gly Thr Asn Leu Tyr Ser  
 500 505 510  
 Ile Asn Leu Lys His Pro Glu Glu Val Lys Ser Phe Ser Leu Pro Ala  
 515 520 525  
 Ser Ile Gly Gln Phe Gly Ile Ser Lys Ile Leu Lys Gly Asn Asn Gln  
 530 535 540  
 Tyr Leu Tyr Ile Ala Thr Leu Gly Ser Gly Leu Phe Cys Tyr Asn Glu  
 545 550 555 560  
 Gln Thr Gln Thr Cys Ile Asn Tyr Thr Pro Glu Gln Asn Gln Leu Leu  
 565 570 575  
 Ser Asn Tyr Cys Tyr Asn Leu Leu Gln Thr Ser Thr Asp Asn Ile Leu  
 580 585 590  
 Ile Thr Ser Asp Arg Gly Ile Thr Leu Phe Asn Pro Thr Thr Glu Ser  
 595 600 605  
 Phe Arg Ser Ile Glu Leu Asp Asn Gly Leu Ser Leu Ser Ser Ile Ile  
 610 615 620  
 Asn Gly Cys Gly Val Trp Met Cys Ser Asp His Thr Ile Phe Ile Gly  
 625 630 635 640  
 Gly Thr Gly Gly Leu Ser Ser Phe Leu Glu Lys Asp Leu Asn Lys Glu  
 645 650 655  
 Tyr Pro Lys Pro Lys Leu Tyr Phe Ser Ser Leu Ser Val Asn Asn Ala  
 660 665 670  
 Arg Ile Ser Pro Asp Asp Lys Ser Arg Ile Leu Thr Glu Gly Leu Pro  
 675 680 685  
 Phe Val Arg Glu Ile Asn Leu Asn Ala Thr Gln Asn Asn Leu Thr Val  
 690 695 700  
 Glu Phe Ala Ser Ser Asn Tyr Val Asp Ile Leu Asn Asn Thr Trp Tyr  
 705 710 715 720  
 Glu Tyr Gln Leu Glu Gly Phe Asp Lys Gln Trp Ser Leu Thr Ser Gln  
 725 730 735  
 Thr Ser Leu Lys Tyr Thr Asn Leu Asp Pro Gly Asp Tyr Val Leu His  
 740 745 750  
 Val Arg Gln Lys Gly Asn Ser Leu Lys Met Arg Lys Ala Gln Glu Ile  
 755 760 765  
 Leu Leu Gln Ile His Ile Asn Thr Pro Trp Tyr Leu Thr Trp Trp Ala  
 770 775 780  
 Trp Leu Ser Tyr Ile Thr Ile Ser Ile Ser Val Thr Tyr Phe Ile Trp  
 785 790 795 800  
 Arg Glu Lys Ser Ser Arg Arg Thr Leu Ala Ile Leu Arg Gln Ser Leu  
 805 810 815  
 Ser Ser Leu Thr Tyr His Gln Ile Leu Phe Asn Pro Ala Ile  
 820 825 830

&lt;210&gt; 8071

&lt;211&gt; 247

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8071

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Met Ile Lys Ser Ile Leu Ile Ala Leu Cys Thr Val Leu Leu Cys Trp
1      5      10      15
Asn Ser Ile Pro Ala Glu Ala Gln Thr Pro Gln Asp Ser Val Arg Phe
20     25     30
Ile Gly Tyr Leu Pro Val Arg His Thr Asp Pro Thr Lys Trp Ile Thr
35     40     45
Arg Tyr Gln Ser Glu Ile Asp Arg Tyr Gln Thr Glu Asn Gln Met Leu
50     55     60
Lys Asp Thr Ser Cys Asp Val Leu Phe Leu Gly Ser Ser Ser Ile Asn
65     70     75     80
Leu Trp Asp Asn Ile Tyr Arg Asp Met Ala Pro Leu Lys Ile Leu Arg
85     90     95
Arg Ser Tyr Gly Gly Ala Ala Leu Arg Asp Met Leu Tyr Asn Tyr Asp
100    105    110
Val Ile Ala Arg Gly Tyr His Pro Arg Ser Ile Val Ile Tyr Val Glu
115    120    125
Asn Asp Leu Ala Gly Thr Pro Glu Asp Leu Thr Val Gly Glu Thr Phe
130    135    140
Asp Phe Phe Arg Leu Leu Thr Asn Arg Leu Gln Arg Asp Tyr Pro Asp
145    150    155    160
Ile Pro Ile Phe Ile Leu Ser Tyr Lys Pro Ser Leu Ala Arg Lys Glu
165    170    175
Met Ile Pro Lys His Glu Ile Ile Asn Ala Leu Leu Gln Glu Tyr Ala
180    185    190
Ser Lys Arg Gly Gly Leu Thr Tyr Ile Asp Val Ala Ser Cys Leu Tyr
195    200    205
Asp Asn Asn Gly Lys Leu Arg Lys Asp Ile Phe Lys Gln Asp Gly Leu
210    215    220
His Met Asn Gln Asn Gly Tyr Asp Leu Trp Thr Ala Ile Leu Lys Pro
225    230    235    240
Lys Ile Leu Glu Ser Ile Arg
245

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&lt;210&gt; 8072

&lt;211&gt; 189

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8072

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Lys Ala Ser Asn Cys Thr Ser Ala Ile Arg Val Glu Lys Arg Val Arg
1      5      10      15
Tyr Phe Gly His Asn Thr Leu Ser Ser Asp Ser Ile Pro Trp Gly Leu
20     25     30
Lys Asp Glu Tyr Cys Pro Ser Tyr Phe Asn Glu Met Arg Asn Leu Thr
35     40     45
Leu Val Asn Arg Glu Tyr Cys Ile Arg Asn Pro Lys His Tyr Lys Gly
50     55     60
Tyr Gly Pro Asp Cys Trp Gly Leu Thr Ala Ser Tyr Ser Val Asp Gly
65     70     75     80
Tyr Ala Ala His Gly Pro Leu Glu Arg Asp Asp Arg Gly Val Ile Ser
85     90     95
Pro Thr Ala Ala Leu Ser Ser Ile Val Tyr Thr Pro Asp Gln Ser Leu
100    105    110
Gln Val Met His His Leu Tyr Glu Met Gly Asp Lys Val Phe Gly Pro
115    120    125

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Tyr Gly Phe Tyr Asp Ala Phe Ser Glu Thr Ala Asp Trp Tyr Pro Lys  
 130 135 140  
 Arg Tyr Leu Ala Ile Asp Gln Gly Pro Ile Ala Val Met Ile Glu Asn  
 145 150 155 160  
 Tyr Arg Thr Gly Leu Leu Trp Lys Leu Phe Met Ser His Pro Asp Val  
 165 170 175  
 Gln Asn Gly Leu Lys Lys Leu Gly Phe Asn Val Lys Lys  
 180 185

<210> 8073

<211> 559

<212> PRT

<213> B.fragilis

<400> 8073

Leu Ser Arg Ser Ser Arg Arg Thr Leu Ala Met Ser Leu Glu Lys Glu  
 1 5 10 15  
 Arg Ile Glu Lys Glu His Ile Glu Glu Met Asn Gln Ala Lys Leu Arg  
 20 25 30  
 Phe Phe Thr Asn Val Ser His Glu Phe Arg Thr Pro Leu Thr Leu Ile  
 35 40 45  
 Ile Ser Gln Val Glu Leu Met Leu Gln Lys Asn Thr Ile Pro Pro Ser  
 50 55 60  
 Leu His Asn Ser Ile Phe Arg Ile Arg Lys His Ala Gln Gln Met Lys  
 65 70 75 80  
 Leu Leu Ile Ser Glu Leu Leu Asp Phe Arg Lys Phe Asp Gln Asn Tyr  
 85 90 95  
 Ile Gln Leu Lys Leu Ser Glu Gln Ser Leu Asn Thr Phe Leu Glu Glu  
 100 105 110  
 Val Tyr Leu Ser Phe Ser Ala Tyr Ala Ser Gln Lys Ser Ile Ser Tyr  
 115 120 125  
 His Leu Lys Leu Leu Glu Gln Asp Ile Ser Ile Trp Ile Asp Asp Trp  
 130 135 140  
 Gln Met Arg Lys Val Leu Phe Asn Leu Leu Ser Asn Ala Phe Lys His  
 145 150 155 160  
 Val Pro Asp Lys Gly Glu Ile Ser Ile Leu Thr Ser Thr Thr Pro Asp  
 165 170 175  
 Gln Val Val Ile Ala Val Lys Asp Ser Gly Asn Gly Ile Ser Lys Glu  
 180 185 190  
 Glu Gln Glu Arg Ile Phe Asp Arg Phe Tyr Gln Ala Asp Asn Arg Asn  
 195 200 205  
 Lys Ala Ile His Val Gly Thr Gly Ile Gly Leu Ala Leu Thr Lys Ser  
 210 215 220  
 Ile Ile Gln Leu His His Gly Thr Ile Glu Val Glu Ser Glu Leu Asn  
 225 230 235 240  
 Glu Gly Ser Cys Phe Ile Val Lys Leu Pro Lys Thr Arg Asp Cys Phe  
 245 250 255  
 Glu Lys Asp Thr Glu Val Val Phe Leu Glu Ser Pro Glu Lys Glu Pro  
 260 265 270  
 Met Val Gln Glu Asn Thr Ile Pro Asp Glu Asn Phe Met Lys Lys Asp  
 275 280 285  
 Asp Ser Thr Phe Glu Thr Pro Leu Ile Asp Glu Arg Glu Gly Lys Arg  
 290 295 300  
 Lys Val Leu Leu Val Glu Asp Asn Val Glu Leu Leu Gln Val Leu Lys  
 305 310 315 320  
 Glu Ile Phe Ser Ser Leu Tyr Gln Val Val Thr Ala Ala Asn Gly Glu  
 325 330 335  
 Glu Gly Leu Lys Gln Ala Phe Ala Glu Val Pro Asp Leu Ile Val Ser  
 340 345 350

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Asp Val Met Met Pro Val Met Thr Gly Thr Glu Met Cys Leu Lys Ile  
 355 360 365  
 Lys Asn Asn Ile Asn Leu Cys His Ile Pro Val Val Leu Leu Thr Ala  
 370 375 380  
 Leu Asp Thr Val Asp Gln Asn Ile Glu Gly Leu Arg Arg Gly Ala Asp  
 385 390 395 400  
 Asp Tyr Ile Thr Lys Pro Phe Asn Ala Lys Ile Leu Ile Thr Arg Cys  
 405 410 415  
 Asn Asn Leu Ile Arg Asn Arg Leu Leu Met Gln Ser Arg Phe Ala Lys  
 420 425 430  
 Asp Gln Ile Leu Glu Ile Asn Leu Leu Ala Ala Asn Pro Ile Asp Lys  
 435 440 445  
 Gly Phe Leu Asp Arg Val Ile Lys Val Val Asp Lys His Ile Asp Asn  
 450 455 460  
 Glu Asp Phe Asp Ile Gly Met Leu Cys Gln Glu Leu Gly Met Gly Arg  
 465 470 475 480  
 Thr Leu Leu His Thr Lys Phe Lys Ala Leu Thr Gly Met Thr Pro Asn  
 485 490 495  
 Glu Phe Ile Leu Asn His Arg Leu Lys Ile Ala Ser Leu Met Leu Lys  
 500 505 510  
 Asn Glu Pro Tyr Leu Gln Val Ala Glu Ile Ser Asp Arg Leu Gly Phe  
 515 520 525  
 Gly Ser Pro Arg Tyr Phe Ser Arg Cys Phe Lys Asn Gln Tyr Asn Val  
 530 535 540  
 Thr Pro Met Glu Tyr Arg Lys Gly Ala Lys Gln Glu Asn Leu Lys  
 545 550 555

&lt;210&gt; 8074

&lt;211&gt; 1008

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8074

Ser Ile Met Arg Lys Ser Lys Leu His Leu Leu Pro Leu Ser Ser Lys  
 1 5 10 15  
 Arg Val Leu Val Ser Thr Ser Leu Ile Met Leu Leu Ser Gly Ser Ala  
 20 25 30  
 Trp Ala Val Ser Ser Gln Glu Thr Val Glu Asn Gly Asp Ala Ile Thr  
 35 40 45  
 Ala Val Pro Gln Gln Arg Arg Thr Val Lys Gly Ile Val Lys Asp Ala  
 50 55 60  
 Asn Gly Glu Pro Ile Ile Gly Ala Asn Val Ile Val Lys Gly Asn Lys  
 65 70 75 80  
 Thr Ile Gly Val Ile Thr Asn Leu Asn Gly Glu Phe Ser Leu Glu Val  
 85 90 95  
 Pro Ser Asn Ala Thr Leu Gln Ile Ser Tyr Ile Gly Tyr Leu Asn Lys  
 100 105 110  
 Glu Val Lys Val Ser Gly Asn Gln Val Ser Phe Asn Ile Gln Leu Glu  
 115 120 125  
 Glu Asp Ser Lys Thr Leu Asp Glu Val Val Val Val Gly Tyr Gly Thr  
 130 135 140  
 Gln Lys Lys Ala Asn Leu Thr Gly Ala Val Ser Ser Val Asp Phe Glu  
 145 150 155 160  
 Glu Gln Thr Lys Ser Arg Pro Ile Thr Thr Val Ser Ser Ala Leu Ala  
 165 170 175  
 Gly Leu Ser Pro Gly Leu Gln Ala Ser Ser Gly Ser Ala Met Pro Gly  
 180 185 190  
 Glu Asp Asn Thr Thr Leu Arg Val Arg Gly Asn Gly Thr Met Asn Asn  
 195 200 205

[illegible]

675	680	685
Asn Tyr Glu Tyr Met Trp Val Tyr Ser Thr Thr Asn Ala Val Phe Gly		
690	695	700
Asn Ala Leu Asn Ser Ala Leu Tyr Met Gly Ala Ile Ala Asn Ser Leu		
705	710	715
Leu Lys Trp Glu Ser Thr Thr Ser Val Asn Phe Gly Ile Asp Val Asn		
	725	730
		735
Leu Leu Lys Asn Arg Leu Ser Ile Ser Ala Asp Leu Tyr Gln Lys Lys		
	740	745
		750
Thr Asp Gly Ile Leu Tyr Arg Pro Thr Ile Pro Tyr Val Phe Gly Thr		
	755	760
		765
Met Thr Ala Pro Arg Gln Asn Leu Ala Lys Val Ser Asn Lys Gly Val		
	770	775
		780
Glu Leu Ser Leu Gly Trp Arg Asp Asn Ile Gly Gly Val Ser Tyr Ser		
785	790	795
		800
Ile Asn Gly Asn Phe Ser Tyr Asn Lys Ser Asn Ile Asp Ala Tyr Asn		
	805	810
		815
Gly Thr Tyr Glu Arg Thr Trp Val Glu Asp Pro Asn Asn Lys Leu Thr		
	820	825
		830
Gly Gly Lys Trp Glu Asp Asn Ile Gly Lys Val Ser Ser Gly Gly Thr		
	835	840
		845
Thr Pro Ile Val Glu Gly Arg Met Met Asn Glu Tyr Tyr Leu Arg Asn		
	850	855
		860
Val Tyr His Gly Asn Gly Ser Tyr Tyr Asn Ala Asp Gly Ser Val Asn		
865	870	875
		880
Pro Gln Gly Gly Pro Lys Thr Gly Met Ile Arg Thr Glu Lys Asp Met		
	885	890
		895
Ala Trp Val Lys Asp Met Ile Ala Ala Gly Tyr Glu Phe Gln Pro Gly		
	900	905
		910
Lys Thr Val Ala Lys Asn Lys Ile Trp Tyr Gly Glu Tyr Ile Tyr Ala		
	915	920
		925
Asp Ser Lys Tyr Asn Gly Val Tyr Gly Asp Asp Asn Asp Tyr Thr Phe		
	930	935
		940
Gln Lys Thr Ser Asn Lys Pro Lys Tyr Asn Phe Arg Phe Gln Ala Phe		
945	950	955
		960
Cys Arg Met Glu Arg Ile Arg Pro Ser Leu Trp Tyr Gly Arg Asn Leu		
	965	970
		975
Pro Asp Leu Thr Tyr Phe Gly Gly Pro Pro Gln Asp Thr Thr Pro Asn		
	980	985
		990
Leu Leu Lys Trp Gly Arg Pro Phe Ala Pro Pro Val Ala Gly Glu Tyr		
	995	1000
		1005

&lt;210&gt; 8075

&lt;211&gt; 311

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8075

Leu Lys Phe Val Arg Pro Arg Pro Phe Gln Pro Arg Gly Glu Asp His		
1	5	10
		15
Asn Ser Lys Leu Leu Phe Val Leu Phe Ala Leu Phe Leu Phe Val Ala		
	20	25
		30
Cys Lys Pro Lys Glu Lys Pro Ser Pro Ala Thr Ser Leu Thr Asp Asp		
	35	40
		45
Ala Leu Met Asp Thr Val Gln Arg Arg Thr Phe Asn Tyr Phe Trp Asp		
	50	55
		60
Ala Ala Glu Pro Asn Ser Gly Leu Ala Arg Glu Arg Tyr His Met Asp		
65	70	75
		80
Gly Glu Tyr Pro Ala Gly Gly Pro Glu Ile Val Thr Ser Gly Gly Ser		

85 90 95  
 Gly Phe Gly Ile Met Ala Ile Leu Ala Gly Ile Asp Arg Gly Tyr Val  
 100 105 110  
 Ser Arg Glu Glu Gly Leu Gln Arg Met Glu Lys Ile Val Gly Phe Leu  
 115 120 125  
 Glu Lys Ala Asp Arg Phe Lys Gly Ala Tyr Pro His Trp Trp Asn Gly  
 130 135 140  
 Glu Thr Gly His Val Gln Pro Phe Gly Gln Lys Asp Asn Gly Gly Asp  
 145 150 155 160  
 Leu Val Glu Thr Ala Phe Leu Met Gln Gly Leu Leu Ala Val His Gln  
 165 170 175  
 Tyr Tyr Ala Glu Gly Ser Ala Glu Glu Lys Lys Leu Ala Gly Arg Ile  
 180 185 190  
 Asp Lys Leu Trp Arg Glu Val Asp Trp Asn Trp Tyr Arg His Gly Gly  
 195 200 205  
 Gln Asn Val Leu Tyr Trp His Trp Ser Pro Glu Tyr Gly Trp Glu Met  
 210 215 220  
 Asn Phe Pro Val His Gly Tyr Asn Glu Cys Leu Ile Met Tyr Ile Leu  
 225 230 235 240  
 Ala Ala Ala Ser Pro Thr His Gly Val Pro Ala Ala Val Tyr His Glu  
 245 250 255  
 Arg Trp Ala Gln Asn Gly Ala Ile Val Ser Pro His Lys Val Glu Gly  
 260 265 270  
 Ile Glu Leu His Leu Arg Tyr Gln Gly Gly Glu Ala Gly Pro Leu Phe  
 275 280 285  
 Trp Ala Gln Tyr Ser Phe Leu Gly Leu Asp Pro Val Gly Ala Glu Arg  
 290 295 300  
 Arg Val Leu Ser Glu Leu Phe  
 305 310

&lt;210&gt; 8076

&lt;211&gt; 90

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8076

Tyr Ile Asp Pro Cys Thr Val Arg Thr Glu Asp Phe Tyr Asn Phe Asp  
 1 5 10 15  
 Leu Ile Ile Gly Met Asp Asp Arg Asn Met Asp Asp Leu Lys Glu Lys  
 20 25 30  
 Ala Pro Ser Pro Ala Glu Trp Lys Ile His Arg Met Thr Glu Tyr  
 35 40 45  
 Cys Thr Arg Ile Pro Ala Asp His Val Pro Asp Pro Tyr Tyr Gly Gly  
 50 55 60  
 Ala Glu Gly Phe Glu Tyr Val Leu Asp Ile Leu Glu Asp Ala Cys Ala  
 65 70 75 80  
 Gly Leu Leu Thr Ser Leu Thr Gln Asp Ser  
 85 90

&lt;210&gt; 8077

&lt;211&gt; 112

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8077

Leu Gly Asp Pro Cys Gly Thr Leu Val His Ala Asp Phe Tyr Ile Phe  
 1 5 10 15  
 Ile Phe Arg Leu Thr His Ser Val Ile Tyr Ser Leu Leu Cys Leu Cys  
 20 25 30



Leu Cys Asn Ile Cys Arg Phe Tyr Thr Ala Glu Gly Val Met Leu His  
           35                  40                  45  
 Pro Ile Asn Asp Ala Gly Leu Glu Arg Glu Leu Val Ile Asp Ser Thr  
       50                  55                  60  
 Gly Ile Leu Ala Tyr His Gln Val Glu Leu Thr Asp Ser Arg Met His  
   65                  70                  75                  80  
 Ala His Ala Val Leu Arg Gly Tyr Glu Leu Ile His Arg Ser Val Tyr  
           85                  90                  95  
 Cys Pro Tyr Gly Arg Phe Leu Gln Leu Arg Ser Tyr Asn Arg Tyr Gly  
          100                 105                 110

<210> 8078  
 <211> 67  
 <212> PRT  
 <213> B.fragilis

<400> 8078  
 Leu Pro Phe Gln Ala Gly Val Val Asn Arg Met Glu His His Ser Phe  
   1                  5                  10                  15  
 Arg Arg Val Lys Ala Ala Asn Val Ala Glu Ala Lys Ala Lys Lys Ala  
           20                  25                  30  
 Val Tyr His Ala Met Gly Gln Ser Lys Tyr Lys Asp Ile Lys Ile Arg  
           35                  40                  45  
 Met His Gln Arg Ala Ala Trp Ile Ser Gln Leu Arg Val Ser Ala Cys  
       50                  55                  60  
 Gly Ile Ile  
   65

<210> 8079  
 <211> 63  
 <212> PRT  
 <213> B.fragilis

<400> 8079  
 Ser Val Cys Leu Thr Cys Ile Val Ala Ala Ser Arg Val Gln Lys Leu  
   1                  5                  10                  15  
 Ile Ile Lys Lys Val Ser Gly Ser Ile Ile Leu Thr Phe Asn Arg Asn  
           20                  25                  30  
 Leu Thr Lys Lys Met Pro Glu Leu Phe Val Pro Val Leu Lys Glu His  
           35                  40                  45  
 Gly Val Lys Ser Ser Phe Ser Lys Ser Gly Asp Arg Gly Trp Val  
       50                  55                  60

<210> 8080  
 <211> 494  
 <212> PRT  
 <213> B.fragilis

<400> 8080  
 Pro Asp Leu Asn Gly Leu Asn Tyr Ser Leu Ser Glu Phe Lys Asn Ser  
   1                  5                  10                  15  
 Lys Gly Asp Val Leu Pro Ala Asp Ala Phe Ser Gly Gly Phe Val Arg  
           20                  25                  30  
 Tyr Val Met Thr Asp Glu Leu Asn Lys Asp Gly Arg Gly Gly Cys Gly  
           35                  40                  45  
 Tyr Arg Pro Asp His Ser Ile Tyr Asp Ser Leu Leu Val Ala Asp Pro  
       50                  55                  60  
 Ile Asp His Leu Leu Thr Ser Met Pro Met Glu Ala Lys Ser Thr Gln  
   65                  70                  75                  80

[illegible]

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<210> 8081
<211> 392
<212> PRT
<213> B.fragilis
<400> 8081
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Phe Cys His Asp Leu Pro Ile Leu Thr Gln Ile Met Ala Glu Arg Lys  
 1 5 10 15  
 Val Arg Val Arg Phe Ala Pro Ser Pro Thr Gly Ala Leu His Ile Gly  
 20 25 30  
 Gly Val Arg Thr Ala Leu Tyr Asn Tyr Leu Phe Ala Arg Gln His Gly  
 35 40 45  
 Gly Asp Leu Ile Phe Arg Ile Glu Asp Thr Asp Ser Asn Arg Phe Val  
 50 55 60  
 Pro Gly Ala Glu Glu Tyr Ile Leu Glu Ser Phe Lys Trp Leu Gly Ile  
 65 70 75 80  
 Gln Phe Asp Glu Gly Val Ser Phe Gly Gly Glu Tyr Gly Pro Tyr Arg  
 85 90 95  
 Gln Ser Glu Arg Arg Glu Ile Tyr Lys Lys Tyr Val Gln Val Leu Leu  
 100 105 110  
 Asp Asn Gly Lys Ala Tyr Ile Ala Phe Asp Thr Pro Glu Glu Leu Tyr  
 115 120 125  
 Val Lys Arg Ala Glu Met Ala Tyr Leu His Tyr Asp Ala Ser Thr Arg  
 130 135 140  
 Val Gly Met Arg Asn Ser Met Thr Leu Pro Lys Glu Glu Val Glu Ala  
 145 150 155 160  
 Leu Ile Ala Asp Gly Lys Gln Tyr Val Val Arg Phe Lys Ile Glu Pro  
 165 170 175  
 Asn Glu Asp Ile His Val Asn Asp Leu Ile Arg Gly Glu Val Val Ile  
 180 185 190  
 Asn Ser Ser Ile Leu Asp Asp Lys Val Leu Tyr Lys Ser Ala Asp Glu  
 195 200 205  
 Leu Pro Thr Tyr His Leu Ala Asn Ile Val Asp Asp His Leu Met Glu  
 210 215 220  
 Val Ser His Val Ile Arg Gly Glu Glu Trp Leu Pro Ser Ala Pro Leu  
 225 230 235 240  
 His Val Leu Leu Tyr Arg Ala Phe Gly Trp Glu Asp Thr Met Pro Ala  
 245 250 255  
 Phe Ala His Leu Pro Leu Leu Leu Lys Pro Glu Gly Asn Gly Lys Leu  
 260 265 270  
 Ser Lys Arg Asp Gly Asp Arg Leu Gly Phe Pro Val Phe Pro Leu Glu  
 275 280 285  
 Trp His Asp Pro Lys Ser Gly Glu Ile Ser Ser Gly Tyr Arg Glu Ser  
 290 295 300  
 Gly Tyr Leu Pro Glu Ala Val Ile Asn Phe Leu Ala Leu Leu Gly Trp  
 305 310 315 320  
 Asn Pro Gly Asn Asp Gln Glu Val Met Ser Met Asp Glu Leu Ile Arg  
 325 330 335  
 Leu Phe Asp Leu His Arg Cys Ser Lys Ser Gly Ala Lys Ile Asp Tyr  
 340 345 350  
 Lys Lys Gly Ile Trp Phe Asn His Thr Tyr Ile Gln Gln Lys Ser Asp  
 355 360 365  
 Lys Lys Asn Ala Arg Thr Val Cys Thr Gly Ala Glu Arg Ala Trp Ser  
 370 375 380  
 Lys Lys Phe Leu Phe Lys Lys Trp  
 385 390

&lt;210&gt; 8082

&lt;211&gt; 704

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8082

Thr Phe Phe Ser Thr Leu Leu Phe Phe Phe Val Leu Phe Ala Lys Asn  
 1 5 10 15

Ser Arg Val Met Glu His Trp Lys Lys Lys Asn Ser Phe Ser Tyr Lys  
 20 25 30  
 Asp Leu Leu Tyr Lys Ala Leu Ile Phe Val Gly Thr Val Ala Phe Ile  
 35 40 45  
 Val Tyr Phe Leu Pro Arg Asp Gly Lys Phe Asn Tyr Gln Phe Asp Ile  
 50 55 60  
 Asn Lys Pro Trp Lys Tyr Gly Gln Leu Met Ala Thr Phe Asp Phe Pro  
 65 70 75 80  
 Ile Tyr Lys Asp Glu Ala Val Val Lys Arg Glu Gln Asp Ser Leu Leu  
 85 90 95  
 Ala Ser Phe Gln Pro Tyr Phe Glu Leu Asp Lys Glu Val Glu Lys Ser  
 100 105 110  
 Ala Leu Ala Lys Leu Lys Glu Asn Tyr His Ala His Leu Lys Gly Ile  
 115 120 125  
 Leu Pro Ser Thr Asp Tyr Ile Arg Tyr Ile Glu Arg Gly Leu Lys Ala  
 130 135 140  
 Ile Tyr Gln Ser Gly Val Val Ser Thr Glu Glu Met Arg Thr Leu Leu  
 145 150 155 160  
 His Asp Ser Ile Phe Ser Val Met Val Ile Glu Asp Lys Leu Ala Asn  
 165 170 175  
 Gln Arg Thr Thr Asp Gly Ile Tyr Thr Val Lys Arg Ala Tyr Glu Asn  
 180 185 190  
 Leu Ile Ser Gly Asp Thr Ala His Tyr Asn Arg Asp Ile Leu Arg Gln  
 195 200 205  
 Cys Ala Leu Asn Asp Tyr Ile Thr Pro Asn Leu Ile Tyr Asp Ser Val  
 210 215 220  
 Arg Thr Glu Thr Ala Arg Lys Glu Leu Leu Asp Asn Tyr Ser Trp Ala  
 225 230 235 240  
 Asn Gly Val Val Gln Ser Gly Gln Lys Ile Ile Asp Arg Gly Glu Ile  
 245 250 255  
 Val Asn Lys Gln Thr Tyr Asn Ile Leu Glu Ser Leu Arg Lys Glu Ser  
 260 265 270  
 Ile Lys Arg Ser Glu Ser Ile Gly Gln Lys Arg Leu Ile Leu Gly Gly  
 275 280 285  
 Gln Ile Leu Phe Val Gly Ile Leu Ile Leu Cys Phe Met Leu Tyr Leu  
 290 295 300  
 Glu Leu Phe Arg Lys Asp Tyr Tyr Glu Arg Lys Gly Ser Leu Ser Leu  
 305 310 315 320  
 Leu Phe Ala Leu Ile Val Phe Tyr Cys Val Ile Thr Ala Leu Met Val  
 325 330 335  
 Thr Asn Asn Ile Phe Asn Val Tyr Ile Leu Pro Tyr Ala Met Leu Pro  
 340 345 350  
 Ile Ile Ile Arg Val Phe Leu Asp Ser Arg Thr Ala Phe Leu Thr His  
 355 360 365  
 Val Ile Thr Ile Leu Ile Cys Ser Ile Thr Leu Arg Tyr Pro His Glu  
 370 375 380  
 Phe Ile Leu Thr Gln Ile Ala Ala Gly Leu Val Ala Ile Phe Ser Leu  
 385 390 395 400  
 Arg Glu Leu Ser Gln Arg Ser Gln Leu Phe Arg Thr Ala Leu Leu Val  
 405 410 415  
 Ile Leu Thr Tyr Ala Ala Ile Tyr Phe Ala Phe Glu Leu Ile Ser Glu  
 420 425 430  
 Asn Asp Leu Ser Lys Leu Asn Val Ser Met Tyr Ile Tyr Phe Ile Ile  
 435 440 445  
 Asn Gly Val Leu Leu Leu Phe Ala Tyr Pro Leu Leu Phe Leu Leu Glu  
 450 455 460  
 Lys Thr Ile Gly Phe Thr Ser Asn Val Thr Leu Val Glu Leu Ser Asn  
 465 470 475 480  
 Ile Asn Asn Asp Leu Leu Lys Lys Met Ser Glu Thr Gly Pro Gly Thr

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485 490 495  
 Phe Gln His Ser Met Gln Val Ala Asn Leu Ala Ala Glu Ala Ala Ile  
 500 505 510  
 Arg Ile Gly Ala Lys Arg Gln Leu Val Arg Thr Gly Ala Leu Tyr His  
 515 520 525  
 Asp Ile Gly Lys Met Glu Asn Pro Ala Phe Phe Thr Glu Asn Gln Ser  
 530 535 540  
 Gly Val Asn Pro His Lys Asn Leu Ser Tyr Glu Gln Ser Ala Gln Val  
 545 550 555 560  
 Val Ile Ser His Val Thr Asp Gly Leu Lys Leu Ala Asp Lys His Asn  
 565 570 575  
 Leu Pro Lys Val Ile Lys Asp Phe Ile Ser Thr His His Gly Arg Gly  
 580 585 590  
 Lys Thr Lys Phe Phe Tyr Ile Ser Trp Lys Asn Glu His Pro Gly Glu  
 595 600 605  
 Glu Pro Asn Glu Glu Val Phe Thr Tyr Pro Gly Pro Asn Pro Phe Ser  
 610 615 620  
 Lys Glu Thr Ala Ile Leu Met Met Ala Asp Ser Val Glu Ala Ala Ser  
 625 630 635 640  
 Arg Ser Leu Pro Glu Tyr Thr Glu Glu Ser Ile Ser Asn Leu Val Asp  
 645 650 655  
 Lys Ile Ile Asp Ser Gln Val Gln Glu Gly Tyr Phe Lys Glu Cys Pro  
 660 665 670  
 Ile Thr Phe Lys Asp Ile Ala Thr Ile Lys Ala Val Phe Lys Glu Lys  
 675 680 685  
 Leu Lys Thr Ile Tyr His Thr Arg Ile Ser Tyr Pro Glu Leu Lys Lys  
 690 695 700

<210> 8083  
 <211> 107  
 <212> PRT  
 <213> B.fragilis

<400> 8083  
 Ser Leu Ile Pro Ser Leu Phe Thr Glu His Ser Cys Ala Cys Ser Val  
 1 5 10 15  
 Pro Ile Ser Lys Gln Tyr Lys Ser Ser Ile Met Asn Phe Ile Trp Tyr  
 20 25 30  
 Ile Leu Ile Gly Ile Leu Ala Gly Tyr Phe Ala Gly Lys Ile Met Arg  
 35 40 45  
 Gly Gly Gly Phe Gly Leu Leu Val Asn Leu Leu Leu Gly Ile Ile Gly  
 50 55 60  
 Gly Val Leu Gly Gly Trp Val Phe Ala Leu Leu Gly Leu Ala Ala Thr  
 65 70 75 80  
 Gly Ile Ile Gly Ser Leu Ile Thr Ser Val Val Gly Ala Ile Leu Phe  
 85 90 95  
 Leu Trp Ile Ala Ser Phe Phe Ser Arg Ser Arg  
 100 105

<210> 8084  
 <211> 183  
 <212> PRT  
 <213> B.fragilis

<400> 8084  
 Val Asn Ser Pro Glu Gly Glu Leu Lys Thr Ser Arg Asn Arg Gln Pro  
 1 5 10 15  
 Arg Thr Lys Thr Leu Phe Phe Glu Gln Met Arg Lys Ala Lys Pro Lys  
 20 25 30

Lys Arg Val Ile Leu Pro Asp Pro Val Phe Asn Asp Gln Lys Val Ser  
 35 40 45  
 Lys Phe Val Asn His Leu Met Tyr Asp Gly Lys Lys Asn Thr Ser Tyr  
 50 55 60  
 Glu Ile Phe Tyr Ala Ala Leu Glu Thr Val Lys Ala Lys Leu Pro Asn  
 65 70 75 80  
 Glu Glu Lys Thr Ala Leu Glu Ile Trp Lys Lys Ala Leu Asp Asn Val  
 85 90 95  
 Thr Pro Gln Val Glu Val Lys Ser Arg Arg Val Gly Gly Ala Thr Phe  
 100 105 110  
 Gln Val Pro Thr Glu Ile Arg Pro Asp Arg Lys Glu Ser Ile Ser Met  
 115 120 125  
 Lys Asn Leu Ile Leu Phe Ala Arg Lys Arg Gly Gly Lys Ser Met Ala  
 130 135 140  
 Asp Lys Leu Ala Ala Glu Ile Met Asp Ala Phe Asn Glu Gln Gly Gly  
 145 150 155 160  
 Ala Phe Lys Arg Lys Glu Asp Met His Arg Met Ala Glu Ala Asn Arg  
 165 170 175  
 Ala Phe Ala His Phe Arg Phe  
 180

<210> 8085

<211> 161

<212> PRT

<213> B.fragilis

<400> 8085

Lys Ser Asn Leu Lys Tyr Arg Thr Lys Glu Ser Val Cys Cys Pro Cys  
 1 5 10 15  
 Ser Leu Glu Arg Ser Val Gly Leu Leu Lys Lys Gln Leu Leu Leu Leu  
 20 25 30  
 Glu Glu Ile Tyr Ser Asn Tyr Ser Ser Ser Thr Glu Gly Glu Ile Ile  
 35 40 45  
 Thr Gln Ser His Arg Thr Val Asn Ala Lys Arg Ile Pro Ile Ser Phe  
 50 55 60  
 Ser Tyr Glu Gly Gly Ile Thr Leu Asp Thr Glu Thr Leu His Tyr Ser  
 65 70 75 80  
 Ser Pro Ser Glu Lys Phe Ala Thr Thr Trp Lys Asn Ile Leu Phe His  
 85 90 95  
 Thr Ile Ser Ile Arg Ile Ile Ile Gly Leu His Lys Ser Asn Met Glu  
 100 105 110  
 Pro Ser Glu Trp Arg Glu Ile Ile His Gln Asn Thr Tyr Gln Lys Phe  
 115 120 125  
 His Arg Lys His Arg Arg Arg Leu Pro Leu Ser Phe Arg Glu Arg Tyr  
 130 135 140  
 Thr Gln Tyr Lys Asn Lys Ala Ser Asp Ala Phe Asn Gln Asp Ala Pro  
 145 150 155 160  
 Lys

<210> 8086

<211> 147

<212> PRT

<213> B.fragilis

<400> 8086

Phe Thr Gly Leu Arg Met Asn Asn Ile Val Tyr Gly Tyr Thr Ser Glu  
 1 5 10 15  
 Asp Thr Phe Val Gln Ser Ser Asn Asn Phe Val Ile Val Leu Glu Val

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<210> 8087
<211> 167
<212> PRT
<213> B.fragilis
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<210> 8088
<211> 139
<212> PRT
<213> B.fragilis
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<400> 8088															
Ile	Lys	Lys	Gln	Phe	Lys	Met	Pro	Thr	Ile	Gln	Gln	Leu	Val	Arg	Lys
1				5					10					15	
Gly	Arg	Glu	Val	Leu	Val	Glu	Lys	Ser	Lys	Ser	Pro	Ala	Leu	Asp	Ser
			20					25					30		
Cys	Pro	Gln	Arg	Arg	Gly	Val	Cys	Val	Arg	Val	Tyr	Thr	Thr	Thr	Pro
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Lys Lys Pro Asn Ser Ala Met Arg Lys Val Ala Arg Val Arg Leu Thr  
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 85 90 95  
 Pro Gly Val Arg Tyr His Ile Val Arg Gly Thr Leu Asp Thr Ala Gly  
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 Lys Pro Gly Gln Ala Ala Pro Ala Lys Lys Lys  
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 Glu Gly Ile Cys Leu Leu Pro Met Leu Leu Arg Ala Leu Cys Arg Leu  
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 Thr Lys Lys Thr Ala Val Thr Gly Arg Asn Leu Phe Gln Leu Leu  
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 Cys Lys Lys Asp Pro Asp Phe Phe Phe Val  
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 Ile Leu Phe Tyr Thr Gly Leu Thr His Lys Ile Gly Glu Val His Asp  
 35 40 45  
 Gly Ala Ala Thr Met Asp Trp Met Glu Gln Glu Gln Glu Arg Gly Ile  
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 Thr Ile Thr Ser Ala Ala Thr Thr Thr Arg Trp Lys Tyr Ala Gly Asp  
 65 70 75 80  
 Thr Tyr Lys Ile Asn Leu Ile Asp Thr Pro Gly His Val Asp Phe Thr  
 85 90 95  
 Ala Glu Val Glu Arg Ser Leu Arg Ile Leu Asp Gly Ala Val Ala Ala  
 100 105 110  
 Tyr Cys Ala Val Gly Gly Val Glu Pro Gln Ser Glu Thr Val Trp Arg  
 115 120 125  
 Gln Ala Asp Lys Tyr Asn Val Pro Arg Ile Ala Tyr Val Asn Lys Met  
 130 135 140  
 Asp Arg Ser Gly Ala Asp Phe Phe Glu Val Val Arg Gln Met Lys Ala  
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 Val Leu Gly Ala Asn Pro Cys Pro Val Val Ile Pro Ile Gly Ala Glu



				165					170					175	
Glu	Asn	Phe	Lys	Gly	Leu	Val	Asp	Leu	Ile	Lys	Met	Lys	Ala	Ile	Tyr
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Trp	His	Asp	Glu	Thr	Met	Gly	Ala	Asp	Tyr	Thr	Ile	Glu	Glu	Ile	Pro
		195					200					205			
Ala	Asn	Leu	Val	Asp	Glu	Ala	Asn	Glu	Trp	Arg	Asp	Lys	Met	Leu	Glu
	210					215					220				
Lys	Val	Ala	Glu	Phe	Asp	Asp	Ala	Leu	Met	Glu	Lys	Tyr	Phe	Asp	Asp
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Pro	Ser	Thr	Ile	Thr	Glu	Glu	Glu	Val	Leu	Arg	Ala	Leu	Arg	Asn	Ala
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Thr	Val	Gln	Met	Ala	Val	Val	Pro	Met	Leu	Cys	Gly	Ser	Ser	Phe	Lys
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Asn	Lys	Gly	Val	Gln	Thr	Leu	Leu	Asp	Tyr	Val	Cys	Ala	Phe	Leu	Pro
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Ser	Pro	Leu	Asp	Ala	Glu	Asn	Val	Val	Gly	Thr	Asn	Pro	Asp	Thr	Gly
	290					295					300				
Ala	Glu	Glu	Asp	Arg	Lys	Pro	Ser	Glu	Asp	Asp	Lys	Thr	Ser	Ala	Leu
	305				310					315					320
Ala	Phe	Lys	Ile	Ala	Thr	Asp	Pro	Tyr	Val	Gly	Arg	Leu	Thr	Phe	Phe
				325					330					335	
Arg	Val	Tyr	Ser	Gly	Lys	Ile	Glu	Ala	Gly	Ser	Tyr	Ile	Tyr	Asn	Ser
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Arg	Ser	Gly	Lys	Lys	Glu	Arg	Val	Ser	Arg	Leu	Phe	Gln	Met	His	Ser
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Asn	Lys	Gln	Asn	Pro	Val	Glu	Val	Ile	Gly	Ala	Gly	Asp	Ile	Gly	Ala
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Gly	Val	Gly	Phe	Lys	Asp	Ile	His	Thr	Gly	Asp	Thr	Leu	Cys	Asp	Glu
	385				390					395					400
Thr	Ala	Pro	Ile	Val	Leu	Glu	Ser	Met	Asp	Phe	Pro	Glu	Pro	Val	Ile
				405					410					415	
Gly	Ile	Ala	Val	Glu	Pro	Lys	Thr	Gln	Lys	Asp	Met	Asp	Lys	Leu	Ser
			420					425				430			
Asn	Gly	Leu	Ala	Lys	Leu	Ala	Glu	Glu	Asp	Pro	Thr	Phe	Thr	Val	Lys
	435						440					445			
Thr	Asp	Glu	Gln	Thr	Gly	Gln	Thr	Val	Ile	Ser	Gly	Met	Gly	Glu	Leu
	450					455					460				
His	Leu	Asp	Ile	Ile	Ile	Asp	Arg	Leu	Lys	Arg	Glu	Phe	Lys	Val	Glu
	465				470					475					480
Cys	Asn	Gln	Gly	Lys	Pro	Gln	Val	Asn	Tyr	Lys	Glu	Ala	Ile	Thr	Lys
				485					490					495	
Thr	Val	Asn	Leu	Arg	Glu	Val	Tyr	Lys	Lys	Gln	Ser	Gly	Gly	Arg	Gly
			500					505					510		
Lys	Phe	Ala	Asp	Ile	Ile	Val	Asn	Ile	Gly	Pro	Val	Asp	Glu	Asp	Phe
	515						520					525			
Thr	Gln	Gly	Gly	Leu	Gln	Phe	Val	Asp	Glu	Val	Lys	Gly	Gly	Asn	Ile
	530					535					540				
Pro	Lys	Glu	Phe	Ile	Pro	Ser	Val	Gln	Lys	Gly	Phe	Gln	Thr	Ala	Met
	545				550					555					560
Lys	Asn	Gly	Val	Leu	Ala	Gly	Tyr	Pro	Leu	Asp	Ser	Leu	Lys	Val	Thr
				565					570					575	
Leu	Val	Asp	Gly	Ser	Phe	His	Pro	Gly	Asp	Ser	Asp	Gln	Leu	Ser	Phe
		580						585				590			
Glu	Ile	Cys	Ala	Ile	Gln	Ala	Tyr	Lys	Asn	Ala	Cys	Ala	Lys	Ala	Gly
		595					600				605				
Pro	Val	Leu	Met	Glu	Pro	Ile	Met	Lys	Leu	Glu	Val	Val	Thr	Pro	Glu
	610					615					620				
Glu	Asn	Met	Gly	Asp	Val	Ile	Gly	Asp	Leu	Asn	Lys	Arg	Arg	Gly	Gln
	625				630				635					640	

Val Glu Gly Met Glu Ser Ser Arg Ser Gly Ala Arg Ile Val Lys Ala  
645 650 655  
Met Val Pro Leu Ala Glu Met Phe Gly Tyr Val Thr Ala Leu Arg Thr  
660 665 670  
Ile Thr Ser Gly Arg Ala Thr Ser Ser Met Val Tyr Ser His His Ala  
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Lys Ala Thr Gly Ala Ile Val Ser Gly Pro Ile Pro Leu Pro Thr His  
35 40 45  
Lys Arg Ile Phe Thr Val Asn Arg Ser Thr Phe Val Asn Lys Lys Ser  
50 55 60  
Arg Glu Gln Phe Glu Leu Ser Ser Phe Lys Arg Leu Ile Asp Ile Tyr  
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Lys Lys Leu Lys Asn Asp Val Phe Asn Ala Leu His Glu Ile Glu Ala  
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Asp Ala Glu Leu Ala Val Val Glu Ala Lys Asp Lys Ala Val Lys Ala  
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Gly Ala Lys Val Ala Gly Lys Val Ala Asp Lys Ala Thr Glu Val Lys  
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Glu Lys Leu Thr Pro Asn Ser  
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 Cys Asp Ala Phe Ile Gly Gln Phe Asp Ala Asn Arg Glu Ser Phe Leu  
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 Thr Gly Val Phe Leu Gly Ser Leu Met Arg Pro Cys Val Pro Ile Phe  
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 Val Met Met Thr Gly Val Leu Leu Leu Pro Val Gln Thr Asp Met Ala  
 65 70 75 80  
 Ala Phe Tyr Lys Lys Arg Ile Gly Arg Leu Ile Pro Pro Met Ile Phe  
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 Trp Ser Leu Val Leu Pro Val Leu Tyr Phe Ile Tyr Leu Asn Tyr Ile  
 100 105 110  
 Asn Pro Asp Thr Gln Asn Pro Leu Ile Ser Met Pro Asp His Ser Leu  
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 Glu Ala Leu Trp Phe Lys Leu Tyr Thr Phe Ile Phe Asn Phe Asn Phe  
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 Asp Thr Val Pro Leu Trp Tyr Leu Tyr Met Leu Ile Gly Leu Tyr Leu  
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 Ile Met Pro Ile Ile Ser Gly Trp Leu Glu Lys Val Ser Lys Lys Glu  
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 Leu Lys Leu Phe Leu Gly Ile Trp Gly Ile Ser Leu Ile Ala Pro Tyr  
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 Val Lys Met Phe Ala Pro Ala Leu Gly Tyr Gln Gly Asn Tyr Gly Asn  
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 Met Gly Leu Trp Gly Val Cys Asp Trp Asn Asp Tyr Gly Thr Phe Tyr  
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 Tyr Phe Ser Gly Phe Ile Gly Tyr Leu Leu Leu Ala Tyr Tyr Leu Thr  
 225 230 235 240  
 Lys Tyr Pro Leu Lys Trp Ser Trp Lys Lys Leu Leu Ser Ile Thr Ile  
 245 250 255  
 Pro Met Phe Leu Thr Gly Tyr Leu Ile Thr Ser Tyr Gly Tyr Val Ile  
 260 265 270  
 Thr Gln Asn Tyr Phe Pro Gly Asn Tyr Ala Tyr Leu Glu Ile Val Trp  
 275 280 285  
 Tyr Phe Ala Gly Ile Asn Val Phe Met Met Thr Phe Pro Val Phe Val  
 290 295 300  
 Ile Val Gln Lys Ile Lys Val Pro Ser Asn His Arg Leu Ser His Met  
 305 310 315 320  
 Ala Ser Leu Ala Phe Gly Ile Tyr Leu Ser His Tyr Val Phe Val Phe  
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 Ile Ala Tyr Asp Leu Leu Asp Thr Glu Leu Leu Pro Tyr Thr Val Arg  
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&lt;211&gt; 1437

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8094

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 Pro Glu Glu Ile Leu Glu Asn Ser Ser Gly Glu Val Leu Lys Pro Glu  
 35 40 45

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Leu	Asp	Glu	Asn	Gly	Asn	Ile	Val	Asp	Val	Met	Arg	Glu	Thr	Ser	Val
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Gly	Arg	Val	Ile	Val	Asn	Glu	Ile	Val	Pro	Pro	Glu	Val	Gly	Tyr	Ile
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Lys	Asn	Leu	Gly	Tyr	Lys	Met	Ala	Phe	Gln	Gly	Gly	Leu	Ser	Phe	Asn
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Leu	Gly	Asp	Ile	Ile	Ile	Pro	Lys	Glu	Lys	Glu	Thr	Leu	Val	Gln	Arg
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Gly	Tyr	Glu	Glu	Val	Glu	Gln	Val	Ile	Ser	Asn	Tyr	Asn	Met	Gly	Phe
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Val	Asn	Ser	Glu	Leu	Ser	Asn	Ile	Leu	Met	Lys	Thr	Ile	Ser	Ser	Asp
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Ala	Lys	Pro	Gln	Lys	Ala	Gly	Ala	Glu	Gly	Gly	Gln	Ile	Ile	Glu	Asn
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Pro	Ile	Leu	Ser	Asn	Phe	Lys	Glu	Gly	Leu	Ser	Val	Leu	Glu	Tyr	Phe
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Thr	Ala	Asp	Ala	Gly	Tyr	Leu	Thr	Arg	Arg	Leu	Val	Asp	Val	Ser	His
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Asp	Val	Ile	Ile	Asn	Glu	Glu	Asp	Cys	Gly	Thr	Leu	Arg	Gly	Leu	Val
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Cys	Thr	Asp	Leu	Lys	Asn	Asn	Asp	Glu	Val	Ile	Ala	Thr	Leu	Tyr	Glu
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Arg	Ile	Leu	Gly	Arg	Val	Ser	Val	His	Asp	Ile	Ile	His	Pro	Gln	Thr
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Leu	Thr	Cys	Glu	Ser	Lys	Lys	Gly	Val	Cys	Ala	Lys	Cys	Tyr	Gly	Arg
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Asn	Leu	Ala	Thr	Asn	His	Met	Val	Gln	Lys	Gly	Glu	Ala	Val	Gly	Val
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Ile	Ala	Ala	Gln	Ser	Ile	Gly	Glu	Pro	Gly	Thr	Gln	Leu	Thr	Leu	Arg
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Thr	Phe	His	Ala	Gly	Gly	Thr	Ala	Ala	Asn	Ile	Ala	Ala	Asn	Ala	Ser
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 Ser Thr His Asn Val Pro Tyr Gly Ser Thr Leu Tyr Val Ala Asp Gly  
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 Gly Glu Val Ile Val Lys Ile Pro Arg Ala Val Gly Lys Ala Gly Asp  
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 Pro Ser Asn Pro Ala Val Val Ser Glu Ile Asp Gly Glu Val Thr Met  
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 Gly Lys Val Lys Arg Gly Asn Arg Glu Ile Ile Val Thr Ser Lys Thr  
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 Ser Thr Gln Ile Leu Gln Gly Ile Thr Arg Ala Ala Leu Gln Thr Ser  
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 Asn Val Ile Cys Gly His Leu Ile Pro Ala Gly Thr Gly Leu Arg Glu  
 1395 1400 1405  
 Phe Asp Lys Ile Ile Val Gly Ser Lys Glu Glu Tyr Asp Arg Ile Leu  
 1410 1415 1420  
 Ala Asn Lys Lys Thr Val Leu Asp Tyr Asn Glu Val Glu  
 1425 1430 1435

&lt;210&gt; 8095

&lt;211&gt; 110

<212> PRT  
 <213> B.fragilis

<400> 8095

Asn	Gln	Ser	Ile	Ile	Lys	Asp	Met	Glu	Asn	Gln	Asn	Pro	Asp	Asn	Gln
1			5					10					15		
Leu	Gln	Ile	Glu	Leu	Lys	Glu	Glu	Val	Ala	Gln	Gly	Thr	Tyr	Ala	Asn
		20					25					30			
Leu	Ala	Ile	Ile	Thr	His	Ser	Ser	Glu	Phe	Val	Leu	Asp	Phe	Val	
		35				40					45				
Arg	Val	Leu	Pro	Gly	Leu	Pro	Lys	Ala	Gly	Val	Gln	Ser	Arg	Val	Ile
	50				55						60				
Leu	Ala	Pro	Glu	His	Ala	Lys	Arg	Leu	Gln	Arg	Ala	Leu	Glu	Glu	Asn
65				70					75						80
Ile	Ala	Lys	Tyr	Glu	Arg	Ala	Phe	Gly	Pro	Ile	Arg	Leu	Gln	Glu	Asp
			85					90					95		
Gly	Val	Asp	Thr	Pro	Pro	Ile	Leu	Asp	Ile	Lys	Gly	Glu	Ala		
		100						105					110		

<210> 8096  
 <211> 125  
 <212> PRT  
 <213> B.fragilis

<400> 8096

Tyr	Leu	Lys	Ile	Ser	Glu	Met	Pro	Gly	Leu	Leu	Gly	Lys	Lys	Ile	Gly
1			5					10						15	
Met	Thr	Ser	Val	Phe	Ser	Ala	Asp	Gly	Lys	Asn	Val	Pro	Cys	Thr	Val
		20					25					30			
Ile	Glu	Ala	Gly	Pro	Cys	Val	Val	Thr	Gln	Val	Lys	Thr	Val	Glu	Lys
		35				40					45				
Asp	Gly	Tyr	Ala	Ala	Val	Gln	Leu	Gly	Phe	Gln	Asp	Lys	Lys	Glu	Lys
	50				55					60					
His	Thr	Thr	Lys	Pro	Leu	Met	Gly	His	Phe	Lys	Lys	Ala	Gly	Val	Thr
65				70					75						80
Pro	Lys	Arg	His	Leu	Ala	Glu	Phe	Lys	Glu	Phe	Glu	Asn	Glu	Leu	Asn
			85					90					95		
Leu	Gly	Asp	Thr	Val	Thr	Val	Glu	Leu	Phe	Asp	Gly	Ala	Asp	Tyr	Val
			100				105						110		
Asp	Val	Val	Gly	Leu	Leu	Lys	Val	Lys	Ala	Phe	Arg	Val			
		115					120					125			

<210> 8097  
 <211> 64  
 <212> PRT  
 <213> B.fragilis

<400> 8097

Leu	His	Thr	Phe	Asn	Leu	Ala	Thr	Ala	Phe	Val	Gln	Val	Thr	Asp	Asn
1			5					10						15	
Val	Thr	His	Val	Phe	Phe	Arg	Ser	Asn	Asp	Phe	Gln	Leu	His	Asp	Arg
		20					25					30			
Leu	His	Gln	Tyr	Arg	Thr	Cys	Leu	Ser	Thr	Ser	Ile	Leu	Ile	Cys	Leu
		35				40					45				
Asp	Ser	Thr	Asp	Phe	Glu	Arg	Gln	Leu	Val	Arg	Val	Thr	Arg	Val	Glu
	50					55					60				

<210> 8098  
 <211> 276

<212> PRT  
 <213> B.fragilis

<400> 8098

Phe	Val	Ser	Leu	Ile	Leu	Asn	Phe	Ile	Lys	Lys	Tyr	Lys	Glu	Leu	Asp
1				5					10					15	
Ala	Glu	Leu	Lys	Arg	Lys	Lys	Phe	Ala	Ile	Thr	Ile	Gly	Asp	Glu	Leu
			20					25					30		
Pro	Ala	Gly	Ile	Ile	Gln	Met	Ala	Lys	Val	Tyr	Ile	Ala	Lys	Lys	Arg
		35					40					45			
Lys	Ile	Gly	Val	Gly	Asp	Lys	Met	Ala	Gly	Arg	His	Gly	Asn	Lys	Gly
	50					55					60				
Ile	Val	Ser	Arg	Val	Val	Arg	Gln	Glu	Asp	Met	Pro	Phe	Leu	Glu	Asp
65					70				75					80	
Gly	Thr	Pro	Val	Asp	Ile	Val	Leu	Asn	Pro	Leu	Gly	Val	Pro	Ser	Arg
				85				90						95	
Met	Asn	Ile	Gly	Gln	Ile	Phe	Glu	Ala	Val	Leu	Gly	Arg	Ala	Gly	Lys
			100					105					110		
Asn	Leu	Gly	Val	Lys	Phe	Ala	Thr	Pro	Ile	Phe	Asp	Gly	Ala	Thr	Leu
		115					120					125			
Asp	Asp	Leu	Asn	Glu	Trp	Thr	Asp	Lys	Ala	Gly	Leu	Pro	Arg	Tyr	Cys
	130					135					140				
Lys	Thr	Tyr	Leu	Cys	Asp	Gly	Gly	Thr	Gly	Glu	Arg	Phe	Asp	Gln	Pro
145				150						155				160	
Ala	Thr	Val	Gly	Val	Thr	Tyr	Met	Leu	Lys	Leu	Gly	His	Met	Val	Glu
				165				170						175	
Asp	Lys	Met	His	Ala	Arg	Ser	Ile	Gly	Pro	Tyr	Ser	Leu	Ile	Thr	Gln
			180					185					190		
Gln	Pro	Leu	Gly	Gly	Lys	Ala	Gln	Phe	Gly	Gly	Gln	Arg	Phe	Gly	Glu
		195					200					205			
Met	Glu	Val	Trp	Ala	Leu	Glu	Gly	Phe	Gly	Ala	Ser	His	Ile	Leu	Gln
	210					215					220				
Glu	Ile	Leu	Thr	Ile	Lys	Ser	Asp	Asp	Val	Val	Gly	Arg	Ser	Lys	Ala
225					230					235				240	
Tyr	Glu	Ala	Ile	Val	Lys	Gly	Glu	Pro	Met	Pro	Gln	Pro	Gly	Ile	Pro
				245					250					255	
Glu	Ser	Leu	Asn	Val	Leu	Leu	His	Glu	Leu	Arg	Gly	Leu	Gly	Leu	Ser
			260					265					270		
Ile	Asn	Leu	Glu												
			275												

<210> 8099  
 <211> 142  
 <212> PRT  
 <213> B.fragilis

<400> 8099

Arg	Asn	Glu	Phe	Leu	Arg	Asn	Val	Thr	Thr	Leu	His	Phe	Ile	Asn	Glu
1				5					10					15	
Leu	Gln	Thr	Thr	Leu	Ser	Lys	Val	Phe	Ile	Asn	Arg	Ala	Asp	Val	His
			20					25					30		
Asn	Asn	Ile	Ser	Glu	Leu	Thr	Thr	Thr	Thr	Arg	Leu	Phe	Leu	Ile	Asn
		35				40						45			
Leu	Thr	Gln	Val	Asn	Cys	Leu	Ser	Asp	Ser	Leu	Phe	Val	Val	Asn	Leu
	50					55					60				
Arg	Phe	Thr	Leu	Val	Thr	Phe	Tyr	Phe	Glu	Phe	Thr	Phe	Gln	Thr	Val
65					70					75				80	
Asp	Asn	Asp	Ile	Gln	Val	Lys	Leu	Thr	His	Thr	Gly	Asn	Asn	Cys	Leu
				85					90					95	



Thr Cys Leu Phe Val Ser Phe His Cys Glu Cys Arg Val Phe Phe Ser  
                   100                  105                  110  
 Gln Phe Ser Gln Thr Val Arg Gln Phe Val His Ile Leu Leu Ser Phe  
                   115                  120                  125  
 Arg Phe His Ser Asn Thr Asp Tyr Arg Phe Arg Glu Val His  
                   130                  135                  140

<210> 8100

<211> 95

<212> PRT

<213> B.fragilis

<400> 8100

Ile Arg Ser Ser Ile Thr Lys Glu Val Leu Gly Ser Ser Pro Glu Phe  
 1                  5                  10                  15  
 Gly Ser Ser Gln Lys Arg Tyr Cys Gly Phe Ser Ala Met Ala Arg Ala  
                   20                  25                  30  
 Met Ala Thr Arg Phe Cys Ile Pro Pro Leu Ile Ser Pro Gly Asn Leu  
                   35                  40                  45  
 Ser Leu Ala Ser Val Arg Leu Thr Arg Ser Arg Gln Asn Ile Ala Arg  
                   50                  55                  60  
 Leu Val Cys Ser Arg Lys Val Ser Val Pro Asn Met Leu Ser Gly Asn  
 65                  70                  75                  80  
 Ile Thr Leu Ser Lys Thr Asp Met Glu Ser Asn Asn Ala Ala Leu  
                   85                  90                  95

<210> 8101

<211> 132

<212> PRT

<213> B.fragilis

<400> 8101

Gln Arg Leu Leu Lys Cys Leu Asn Leu Phe Gly Met Ala Lys Ile Lys  
 1                  5                  10                  15  
 Thr Glu Lys Gln Tyr Lys Ala Ala Cys Ser Arg Ile Glu Glu Leu Leu  
                   20                  25                  30  
 Lys Val Val Ser Asn Asp Thr Pro Thr Asp Asp Lys Asn Phe Leu Glu  
                   35                  40                  45  
 Leu Asp Leu Ile Ser Asp Leu Val Ala Asp Tyr Glu Glu Glu His Phe  
                   50                  55                  60  
 Pro Ile Glu Ala Pro Ser Leu Val Asp Val Ile Lys Leu Arg Met Tyr  
 65                  70                  75                  80  
 Glu Met Gly Leu Thr Gln Thr Lys Leu Ser Glu Leu Leu Asn Val Ser  
                   85                  90                  95  
 Pro Ser Arg Ile Ser Glu Tyr Leu Ser Gly Lys Cys Glu Pro Thr Leu  
                   100                  105                  110  
 Lys Val Ala Arg Glu Ile Ser Arg Lys Leu Asn Ile Asp Ala Asn Ile  
                   115                  120                  125  
 Val Leu Gly Val  
                   130

<210> 8102

<211> 495

<212> PRT

<213> B.fragilis

<400> 8102

Thr His Ser Pro Met Ser Phe Ile Ala Asp Lys Ile Val Met Asp Gly  
 1                  5                  10                  15

Leu	Thr	Tyr	Asp	Asp	Val	Leu	Leu	Ile	Pro	Ala	Tyr	Ser	Glu	Val	Leu
Pro	Arg	Thr	Val	Asp	Leu	Ser	Thr	Lys	Phe	Ser	Arg	Asn	Ile	Glu	Leu
Lys	Ile	Pro	Phe	Val	Thr	Ala	Ala	Met	Asp	Thr	Val	Thr	Glu	Ala	Lys
Met	Ala	Ile	Ala	Ile	Ala	Arg	Glu	Gly	Gly	Ile	Gly	Val	Ile	His	Lys
65				70					75					80	
Asn	Met	Ser	Ile	Lys	Glu	Gln	Ala	Lys	Gln	Val	Ala	Thr	Val	Lys	Arg
				85					90					95	
Ala	Glu	Asn	Gly	Met	Ile	Tyr	Asp	Pro	Val	Thr	Ile	Lys	Gln	Gly	Ser
			100					105					110		
Thr	Val	Arg	Asp	Ala	Leu	Ala	Leu	Met	Ala	Glu	Tyr	Lys	Ile	Gly	Gly
			115				120						125		
Ile	Pro	Val	Val	Asp	Asp	Asn	Arg	Tyr	Leu	Val	Gly	Ile	Val	Thr	Asn
			130			135						140			
Arg	Asp	Leu	Arg	Phe	Glu	Arg	Asn	Met	Asp	Lys	Arg	Ile	Asp	Glu	Val
145					150					155					160
Met	Thr	Lys	Glu	Asn	Leu	Val	Thr	Thr	Asn	Gln	Ser	Thr	Asp	Leu	Glu
				165					170					175	
Ala	Ala	Ser	Gln	Ile	Leu	Gln	Tyr	His	Lys	Ile	Glu	Lys	Leu	Pro	Val
			180					185					190		
Val	Asp	Lys	Glu	Gly	Lys	Leu	Ile	Gly	Leu	Val	Thr	Tyr	Lys	Asp	Ile
			195				200						205		
Thr	Lys	Ala	Lys	Asp	Lys	Pro	Met	Ala	Cys	Lys	Asp	Ser	Lys	Gly	Arg
			210			215						220			
Leu	Arg	Val	Ala	Ala	Gly	Val	Gly	Val	Thr	Ala	Asp	Thr	Phe	Asp	Arg
225					230					235					240
Met	Gln	Ala	Leu	Val	Asp	Ala	Gly	Ala	Asp	Ala	Ile	Val	Ile	Asp	Thr
				245					250					255	
Ala	His	Gly	His	Ser	Lys	Gly	Val	Ile	Asp	Thr	Leu	Arg	Glu	Ala	Lys
			260					265					270		
Lys	Arg	Tyr	Pro	Asp	Ile	Asp	Ile	Val	Val	Gly	Asn	Ile	Ala	Thr	Gly
			275				280					285			
Asp	Ala	Ala	Lys	Ala	Leu	Val	Glu	Ala	Gly	Ala	Asp	Gly	Val	Lys	Val
			290			295					300				
Gly	Ile	Gly	Pro	Gly	Ser	Ile	Cys	Thr	Thr	Arg	Val	Val	Ala	Gly	Val
305					310					315					320
Gly	Val	Pro	Gln	Leu	Ser	Ala	Val	Tyr	Asp	Val	Ala	Lys	Ala	Leu	Lys
				325					330					335	
Gly	Thr	Gly	Ile	Pro	Leu	Ile	Ala	Asp	Gly	Gly	Leu	Arg	Tyr	Ser	Gly
			340					345					350		
Asp	Val	Val	Lys	Ala	Leu	Ala	Ala	Gly	Gly	Tyr	Ser	Val	Met	Ile	Gly
			355				360					365			
Ser	Leu	Val	Ala	Gly	Thr	Glu	Glu	Ser	Pro	Gly	Glu	Thr	Ile	Ile	Phe
			370			375					380				
Asn	Gly	Arg	Lys	Phe	Lys	Ser	Tyr	Arg	Gly	Met	Gly	Ser			

<210> 8103  
 <211> 788  
 <212> PRT  
 <213> B.fragilis

<400> 8103

Asn	Arg	Ala	Leu	Ile	Lys	Lys	Asp	Met	Asp	Arg	Arg	Asp	Tyr	Tyr	Val
1				5					10					15	
Glu	Tyr	Tyr	Glu	Val	Leu	Asp	Arg	Val	Leu	Ser	Asp	Tyr	Val	Asn	Gln
			20					25					30		
Leu	Arg	Glu	Lys	Arg	Glu	His	Trp	Leu	Lys	Met	Gly	Arg	His	Asp	Val
		35				40						45			
Gly	Val	Pro	Leu	Ile	Asn	Leu	Leu	Phe	Trp	Gln	Phe	Thr	Trp	His	Arg
	50				55						60				
Glu	Glu	Tyr	Asp	Arg	Leu	Arg	Lys	Glu	Gly	Lys	Ser	Cys	Gly	Glu	Ala
65					70					75					80
Leu	Gly	Ser	Val	Lys	Glu	Ile	Leu	Ala	Asp	Lys	Gln	Val	Glu	Glu	Trp
			85					90					95		
Glu	Arg	Gln	Glu	Glu	Tyr	Lys	Ile	Tyr	Asp	His	Glu	Trp	Tyr	Glu	
		100					105					110			
Ala	Leu	Ala	Pro	Tyr	Gly	Gly	Gln	Leu	Val	Ile	Tyr	Ile	Tyr	Asn	Ala
		115					120					125			
Arg	Gln	Leu	Val	Tyr	Leu	Thr	Pro	Leu	Ile	Glu	Arg	Leu	Glu	Glu	Pro
	130					135					140				
Val	Leu	Leu	Leu	Ser	Glu	Tyr	Glu	Ile	Pro	Asp	Glu	Thr	Glu	Leu	Pro
145					150					155					160
Asp	Phe	Val	Thr	Ala	Ile	Thr	Leu	Glu	Phe	Thr	Lys	Thr	Ala	Pro	Leu
				165				170						175	
Val	Asn	Pro	Phe	Leu	Lys	Glu	Trp	Phe	Pro	Leu	Ile	Phe	Gln	Tyr	Ala
			180					185					190		
Asn	Thr	Phe	Asp	Ile	Leu	Met	Arg	Ile	Leu	Gln	Pro	Lys	Gly	Leu	Ile
		195				200						205			
Phe	Leu	Glu	Gly	Cys	His	Tyr	Gln	Gln	Leu	Leu	Leu	Ala	Thr	Ile	Gly
	210				215						220				
Arg	Asp	Tyr	Gly	Val	Pro	Thr	Leu	Cys	Ile	Gln	Gln	Gly	Trp	Pro	Ser
225					230					235					240
Leu	Met	His	Thr	Ala	Phe	Arg	Arg	Met	Pro	Tyr	Arg	Tyr	Tyr	Leu	Met
				245				250						255	
Trp	Gly	Glu	Gly	Phe	Arg	Thr	Leu	Trp	Glu	Lys	His	Asn	Pro	Leu	Pro
		260					265						270		
Asp	Phe	Val	Pro	Thr	Gly	Tyr	Met	Tyr	Gln	Val	Glu	Pro	Arg	Asn	Glu
		275				280						285			
Thr	Lys	Lys	Glu	Cys	Val	Thr	Phe	Phe	Leu	Gln	Gly	Pro	Phe	Phe	Leu
	290					295					300				
Ser	Asp	Lys	Arg	Tyr	Leu	Gln	Glu	Met	Ile	Arg	Leu	Ile	Gly	Thr	Val
305					310					315					320
Ala	Val	Glu	Phe	Pro	Ala	Arg	Arg	Phe	Leu	Val	Arg	Glu	His	Pro	Glu
			325					330						335	
Phe	Arg	Ile	Gly	Glu	Glu	Val	Arg	Met	Glu	Trp	Glu	Gln	Ile	Pro	Asn
		340					345						350		
Ile	Glu	Met	Val	Thr	Asp	Gly	Lys	Leu	Ala	Glu	Val	Phe	Ala	Arg	Thr
		355				360						365			
Arg	Val	Gly	Val	Ala	His	Tyr	Ser	Ser	Ser	Leu	Met	Glu	Gly	Val	Ala
	370				375						380				
His	Gly	Ala	Val	Pro	Leu	Val	Tyr	Asp	Pro	Thr	Glu	Gly	Ser	Arg	Tyr
385				390						395					400
Ser	Pro	Asp	Val	Glu	Ala	Glu	Gly	Leu	Gly	Met	Ile	Ala	Lys	Thr	Lys

405 410 415  
 Glu Glu Leu Thr Gly Gly Leu Ser Arg Ile Leu Gly Asn Tyr Glu Asp  
 420 425 430  
 Phe Lys Gln Arg Ile Glu Lys Glu Gln Pro Leu Trp Leu Gln Ala Thr  
 435 440 445  
 Gly Glu Glu Thr Leu Arg Asn Met Val Gly Phe Ile Lys Glu Lys Met  
 450 455 460  
 Pro Pro Val Thr Leu Lys Glu Ile Tyr Val Val Asp Thr Asp Thr Leu  
 465 470 475 480  
 Thr Arg Glu Arg Pro Val Gly Val Ser Gly Val Leu Arg Cys Lys Asn  
 485 490 495  
 Cys Glu Asp Phe Leu Glu Met Cys Ile Asp Ser Cys Ile Asp Gly Leu  
 500 505 510  
 Asp Glu Leu Ile Ala Val Tyr His Asp Cys Thr Asp Arg Thr Pro Glu  
 515 520 525  
 Ile Leu Arg Gln Lys Ala Ala Gln Tyr Pro Asp Lys Ile Arg Val Phe  
 530 535 540  
 Glu Tyr Arg Pro Ser Val Tyr Pro Ile Asp Leu Asp Glu Glu Glu Leu  
 545 550 555 560  
 Glu Lys Ala Lys Leu Leu Pro Pro Asp Ser Ile His Thr Leu Ala Gly  
 565 570 575  
 Tyr Cys Asn Tyr Ala Leu Ser Lys Ala Ser Tyr Arg Tyr Ala Val Lys  
 580 585 590  
 Ile Asp Ala Asp Gln Val Tyr Phe Thr Asp Arg Leu Lys His Ile Cys  
 595 600 605  
 Asp Ala Tyr Arg Ser Asp Lys Lys Val Arg Phe Asn Val Ala Glu Cys  
 610 615 620  
 Ile Ser Tyr Asn Leu Tyr Arg Ala Tyr Val Asp Ser Phe Asn Arg Ile  
 625 630 635 640  
 Glu Met Arg Pro Phe Arg Trp Leu Glu Arg Ile Ala Leu Trp Thr His  
 645 650 655  
 Ala Ser Tyr Ala Ser Tyr Leu Glu Lys Met Ile Ile Arg Tyr Lys Val  
 660 665 670  
 Pro Val Ser Met Ser Gly Ile Asn Leu Phe Arg Lys Asp Arg Glu Trp  
 675 680 685  
 Met Val Gly Leu Gly Gln Glu His Pro Glu Pro Asp Ser Lys Glu Ile  
 690 695 700  
 Leu Pro Pro Phe Asn Gly Val Arg Asp Thr Phe Phe Phe Glu Val Ser  
 705 710 715 720  
 Ala Asp Arg Ile Phe Arg Tyr Val Thr Glu Thr Lys Pro Asp Gly Arg  
 725 730 735  
 His Arg Gly Val Glu Val Met Arg Cys Pro Asn Glu Ile Leu Asp Val  
 740 745 750  
 Gly Phe Cys Trp Phe His Leu Arg Ala Leu Met Lys Glu His Glu Glu  
 755 760 765  
 Gly Tyr Arg Gln Ser Tyr Arg Lys His Pro Glu Val Phe Thr Thr Val  
 770 775 780  
 Gln Glu Ile Ser  
 785

&lt;210&gt; 8104

&lt;211&gt; 60

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8104

Ser Thr Ser Thr Pro Phe Asn Gly Leu Phe Arg Gln Ser Ala Ala Leu  
 1 5 10 15  
 Ser Leu Leu Arg Leu His Ile Thr Pro Thr Gly Ser Thr Gly Ile Leu

	20		25		30
Thr	Cys	Ser	Ala	Ile	Gly
	35		40		45
Leu	Thr	Leu	Ile	Arg	Leu
50		55		60	

<210> 8105  
 <211> 68  
 <212> PRT  
 <213> B.fragilis

Thr	Tyr	Ala	Thr	Lys	Leu	Gln	Val	Pro	Lys	Met	Lys	Ser	Lys	Phe	Glu
1			5				10							15	
Asp	Gly	Gln	Tyr	Leu	Asn	Ile	Tyr	His	Ile	Lys	Ser	Ala	Thr	Tyr	Ile
	20						25					30			
Asn	Ser	Phe	Leu	Phe	Asp	Gly	Gln	Thr	Gly	Leu	Thr	Thr	Arg	Pro	Thr
	35						40					45			
Glu	Ala	Ile	Ser	Gly	Thr	Pro	Ser	Ser	Ile	Leu	Ser	Leu	Cys	Leu	Arg
50						55					60				
Leu	Leu	Lys	Ala												
65															

<210> 8106  
 <211> 87  
 <212> PRT  
 <213> B.fragilis

Asn	Phe	Val	Thr	Met	Lys	Lys	Leu	Ser	Lys	Ile	Lys	Leu	Thr	Asn	Leu
1			5					10						15	
Ser	Gln	Glu	Asp	Leu	Ala	Asp	Arg	Glu	Met	Asn	Ala	Leu	Arg	Gly	Gly
	20							25				30			
His	Asn	Cys	Gly	Cys	Ala	Cys	Ser	Ser	Thr	Ser	Lys	Ala	Thr	Asn	His
	35						40					45			
Ser	Ser	Asn	Glu	Asp	Arg	Asp	Leu	His	Ser	Pro	Glu	Gly	Asn	Val	Ile
50						55					60				
Cys	Thr	Trp	Val	Gly	Gly	Ala	Gly	Ser	Asp	Ile	Ser	Val	Tyr	Gly	Gly
65				70					75					80	
Ser	Lys	Ala	Pro	Gly	Met	Pro									
				85											

<210> 8107  
 <211> 89  
 <212> PRT  
 <213> B.fragilis

Asn	Phe	Val	Thr	Met	Lys	Lys	Leu	Ser	Lys	Ile	Lys	Leu	Thr	Asn	Leu
1			5					10						15	
Ser	Gln	Glu	Asp	Leu	Ala	Asp	Arg	Glu	Met	Asn	Ala	Leu	Arg	Gly	Gly
	20							25				30			
His	Thr	Cys	Gly	Cys	Ala	Cys	Ile	Lys	Gly	Ala	Glu	Phe	Lys	Ala	Thr
	35						40					45			
Asn	Tyr	Ser	Ala	Asn	Val	Ala	Asp	Asp	Lys	Tyr	Ser	Pro	Glu	Gly	Asn
50						55					60				
Ile	Ile	Cys	Asn	Trp	Val	Gly	Gly	Ser	Gly	Ser	Asp	Met	Ala	Val	Tyr
65				70					75					80	
Gly	Gly	Ser	Lys	Val	Pro	Gly	Met	Pro							

<210> 8108  
 <211> 259  
 <212> PRT  
 <213> B.fragilis

<400> 8108

Pro	Gln	Arg	Thr	Asp	Ser	Phe	Gly	Arg	Gly	Arg	Trp	Lys	Leu	Phe	Val
1				5					10					15	
Gln	Arg	Arg	Pro	Ser	Gly	Pro	Val	Leu	Pro	Ala	Gly	Leu	Ser	Lys	Asp
			20					25					30		
Asp	Ser	Leu	Leu	Phe	Ala	Glu	His	Tyr	Val	Arg	Ser	Trp	Val	Glu	Asp
		35					40					45			
Val	Leu	Leu	Phe	Asn	Gln	Ala	Gln	Ser	Asn	Ile	Pro	Asp	Asn	Gly	Glu
	50					55					60				
Ile	Asp	Lys	Leu	Val	Glu	Asn	Tyr	Arg	Lys	Ala	Leu	Ile	Met	His	Thr
65					70					75					80
Tyr	Gln	Gln	Glu	Leu	Ile	Ser	Gln	Lys	Leu	Ser	Gly	Glu	Ile	Pro	Glu
				85					90					95	
Gln	Glu	Ile	Ala	Asp	Tyr	Tyr	Glu	Lys	Asn	Lys	Glu	Leu	Phe	Lys	Leu
			100					105					110		
Asp	Arg	Pro	Leu	Met	Lys	Gly	Leu	Phe	Ile	Lys	Val	Pro	Leu	Thr	Ala
		115					120					125			
Pro	Gln	Leu	Gly	Asn	Val	Arg	Lys	Trp	Tyr	Lys	Thr	Glu	Thr	Gln	Asp
	130					135					140				
Ala	Val	Glu	His	Leu	Glu	Lys	Tyr	Ser	Leu	Gln	Asn	Ala	Val	Lys	Tyr
145					150					155					160
Glu	Tyr	Phe	Tyr	Asp	Lys	Trp	Val	Arg	Val	Ala	Asp	Val	Leu	Asp	Met
				165					170					175	
Ile	Pro	Leu	Lys	Ala	Glu	Ser	Pro	Glu	Ala	Tyr	Met	Asp	Lys	Asn	Arg
			180					185				190			
His	Ile	Glu	Leu	Lys	Asp	Thr	Ala	Phe	Tyr	Tyr	Phe	Leu	Asn	Ile	Ser
		195					200					205			
Asp	Phe	Arg	Val	Ala	Gly	Glu	Gln	Glu	Pro	Tyr	Glu	Phe	Ala	Gln	Pro
	210					215					220				
Lys	Val	Lys	Asp	Met	Leu	Val	Asn	Ile	Lys	Arg	Val	Asp	Phe	Met	Lys
225					230					235					240
Gln	Val	Lys	Asp	Asp	Leu	Tyr	Glu	Arg	Ala	Val	Lys	Arg	Lys	Lys	Ile
			245						250					255	

Ile Asn Tyr

<210> 8109  
 <211> 102  
 <212> PRT  
 <213> B.fragilis

<400> 8109

Tyr	Glu	Ile	Ala	Met	Gly	Met	Phe	Asn	Val	Arg	Lys	Pro	Arg	Gly	Phe
1				5					10					15	
Asn	His	Gln	Tyr	Ile	Tyr	Val	Asp	Glu	Arg	Lys	Glu	Lys	Leu	Ala	Lys
			20					25					30		
Met	Glu	Glu	Asp	Ala	Lys	Arg	Asp	Leu	Gly	Ile	Leu	Pro	Glu	Lys	Glu
		35					40					45			
Phe	Ser	Pro	Glu	Asp	Ile	Arg	Gly	Lys	Phe	Ile	Glu	Gly	Thr	Thr	His
	50					55					60				
Leu	Lys	Arg	Arg	Lys	Glu	Ser	Gly	Arg	Lys	Pro	Ala	His	Leu	Gly	Val
65					70					75					80

[illegible]

<400> 8110

<400> 8111

Tyr	Asp	Met	Ala	Lys	Ile	Gln	Ile	Lys	Ser	Glu	Lys	Leu	Thr	Pro	Phe
1				5					10					15	
Gly	Gly	Ile	Phe	Ser	Ile	Met	Glu	Lys	Phe	Asp	Ser	Met	Leu	Ser	Pro
			20					25					30		
Val	Ile	Asp	Ser	Thr	Leu	Gly	Gln	Arg	Cys	Ser	Ser	Ile	Phe	Gly	Tyr
		35					40					45			
Gln	Phe	Ser	Glu	Ile	Val	Arg	Ser	Leu	Met	Ser	Val	Tyr	Phe	Cys	Gly
	50					55					60				
Gly	Ser	Cys	Val	Glu	Asp	Val	Thr	Ser	Gln	Leu	Met	Arg	His	Leu	Ser
65					70					75					80
Tyr	His	Pro	Thr	Leu	Arg	Thr	Cys	Ser	Ser	Asp	Thr	Ile	Leu	Arg	Ala
				85					90					95	
Ile	Lys	Glu	Leu	Thr	Gln	Glu	Asn	Ile	Ser	Tyr	Thr	Ser	Asp	Gln	Gly
			100					105					110		
Lys	Thr	Tyr	Asp	Phe	Asn	Thr	Ala	Asp	Lys	Leu	Asn	Thr	Leu	Leu	Ile

115	120	125
Asn Ala Leu Val Ser Thr Gly	Glu Leu Lys Glu Ile Glu	Glu Tyr Asp
130	135	140
Val Asp Phe Asp His Gln Phe	Leu Glu Thr Glu Lys Tyr Asp	Ala Lys
145	150	155
Pro Thr Tyr Lys Lys Phe Leu	Gly Tyr Arg Pro Gly Val Tyr	Val Ile
165	170	175
Gly Asp Lys Ile Val Tyr Ile	Glu Asn Ser Asp Gly Asn Thr	Asn Val
180	185	190
Arg Phe His Gln Ala Asp Thr	His Lys Arg Phe Phe Ala	Leu Glu
195	200	205
Ser Gln Asn Ile Arg Val Asn	Arg Phe Arg Ala Asp Cys	Gly Ser Cys
210	215	220
Ser Lys Glu Ile Val Ser Glu	Ile Glu Lys His Cys Lys	His Phe Tyr
225	230	235
Ile Arg Ala Asn Arg Cys Ser	Ser Leu Tyr Asn Asp Ile	Phe Ala Leu
245	250	255
Arg Gly Trp Lys Thr Glu Glu	Ile Asn Gly Ile Gln Phe	Glu Leu Asn
260	265	270
Ser Ile Leu Val Glu Lys Trp	Glu Gly Lys Cys Tyr Arg	Leu Val Ile
275	280	285
Gln Arg Gln Arg Arg Asn Ser	Gly Asp Leu Asp Leu Trp	Glu Gly Glu
290	295	300
Tyr Thr Tyr Arg Cys Ile Leu	Thr Asn Asp Tyr Lys Ser	Ser Thr Arg
305	310	315
Asp Ile Val Glu Phe Tyr Asn	Leu Arg Gly Gly Lys Glu	Arg Ile Phe
325	330	335
Asp Asp Met Asn Asn Gly Phe	Gly Trp Ser Arg Leu Pro	Lys Ser Phe
340	345	350
Met Ala Glu Asn Thr Val Phe	Leu Leu Leu Thr Ala	Leu Ile His Asn
355	360	365
Phe Tyr Lys Thr Ile Met Ser	Arg Leu Asp Thr Lys Ala	Phe Gly Leu
370	375	380
Lys Lys Thr Ser Arg Ile Lys	Ala Phe Val Phe Arg Phe	Ile Ser Val
385	390	395
Pro Ala Lys Trp Ile Met Thr	Ala Arg Gln Tyr Val Leu	Asn Ile Tyr
405	410	415
Thr Glu Asn Arg Ala Tyr Ala	Lys Pro Phe Lys Thr Glu	Phe Gly
420	425	430

<210> 8112  
 <211> 63  
 <212> PRT  
 <213> B.fragilis

<400> 8112
Lys Lys Met Ala His Pro Lys Arg Arg Gln Ser Lys Thr Arg Thr Ala
1 5 10 15
Lys Arg Arg Thr His Asp Lys Ala Val Ala Pro Thr Leu Ala Ile Cys
20 25 30
Pro Asn Cys Gly Glu Trp His Val Tyr His Thr Val Cys Gly Ala Cys
35 40 45
Gly Tyr Tyr Arg Gly Lys Leu Ala Ile Glu Lys Glu Ala Ala Val
50 55 60

<210> 8113  
 <211> 728  
 <212> PRT  
 <213> B.fragilis



&lt;400&gt; 8113

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Ile Lys Met Ala Gly Lys Ile Asn Leu Thr Asp Gln Leu Lys Lys Tyr
1      5      10      15
Phe Gly Phe Asp Asn Phe Lys Gly Asn Gln Glu Pro Ile Ile Gln Asn
20      25      30
Leu Leu Asp Gly Asn Asp Thr Phe Val Leu Met Pro Thr Gly Gly Gly
35      40      45
Lys Ser Leu Cys Tyr Gln Leu Pro Ser Leu Leu Met Glu Gly Thr Ala
50      55      60
Ile Val Ile Ser Pro Leu Ile Ala Leu Met Lys Asn Gln Val Asp Ala
65      70      75      80
Met Arg Asn Phe Ser Glu Glu Asp Gly Val Ala His Phe Ile Asn Ser
85      90      95
Ser Leu Asn Lys Gly Ala Ile Asp Gln Val Arg Ser Asp Ile Leu Ala
100     105     110
Gly Lys Thr Lys Leu Leu Tyr Val Ala Pro Glu Ser Leu Thr Lys Glu
115     120     125
Glu Asn Val Glu Phe Leu Arg Ser Val Lys Ile Ser Phe Tyr Ala Val
130     135     140
Asp Glu Ala His Cys Ile Ser Glu Trp Gly His Asp Phe Arg Pro Glu
145     150     155     160
Tyr Arg Arg Ile Arg Pro Ile Ile Asn Glu Ile Gly Lys Ala Pro Leu
165     170     175
Ile Ala Leu Thr Ala Thr Ala Thr Pro Lys Val Gln His Asp Ile Gln
180     185     190
Lys Asn Leu Gly Met Val Asp Ala His Val Phe Lys Ser Ser Phe Asn
195     200     205
Arg Pro Asn Leu Tyr Tyr Glu Val Arg Pro Lys Thr Gln Asn Val Asp
210     215     220
Lys Asp Ile Ile Lys Phe Ile Lys Asn Asn Pro Glu Lys Ser Gly Ile
225     230     235     240
Ile Tyr Cys Leu Ser Arg Lys Lys Val Glu Glu Leu Ala Glu Ile Leu
245     250     255
Gln Ala Asn Gly Ile Asn Ala Arg Ala Tyr His Ala Gly Met Asp Ser
260     265     270
Ala Thr Arg Thr Gln Asn Gln Asp Asp Phe Leu Met Glu Lys Ile Asp
275     280     285
Val Ile Val Ala Thr Ile Ala Phe Gly Met Gly Ile Asp Lys Pro Asp
290     295     300
Val Arg Tyr Val Ile His Tyr Asp Ile Pro Lys Ser Leu Glu Gly Tyr
305     310     315     320
Tyr Gln Glu Thr Gly Arg Ala Gly Arg Asp Gly Gly Glu Gly Gln Cys
325     330     335
Ile Thr Phe Tyr Thr Asn Lys Asp Leu Gln Lys Leu Glu Lys Phe Met
340     345     350
Gln Gly Lys Pro Val Ala Glu Gln Glu Ile Gly Lys Gln Leu Leu Leu
355     360     365
Glu Thr Ala Ala Tyr Ala Glu Ser Ser Val Cys Arg Arg Lys Thr Leu
370     375     380
Leu His Tyr Phe Gly Glu Glu Tyr Thr Glu Glu Asn Cys Gly Asn Cys
385     390     395     400
Asp Asn Cys Leu Asn Pro Lys Lys Gln Val Glu Ala Gln Glu Leu Leu
405     410     415
Cys Ala Val Ile Glu Thr Ile Ile Ala Val Lys Glu Asn Phe Lys Ala
420     425     430
Asp Tyr Ile Ile Asp Val Leu Gln Gly Arg Glu Thr Ser Glu Val Gln
435     440     445
Ala His Leu His Glu Asp Leu Glu Val Phe Gly Ser Gly Met Gly Glu

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117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400

450	455	460
Glu Asp Lys Thr Trp	Asn Ala Val Ile Arg	Gln Ala Leu Ile Ala Gly
465	470	475
Tyr Leu Ser Lys Asp	Val Glu Asn Tyr Gly	Leu Leu Lys Val Thr Asp
	485	490
Ala Gly Lys Lys Phe	Leu Lys His Pro Lys	Ser Phe Lys Ile Thr Glu
	500	505
Asp Asn Asp Phe Glu	Glu Val Glu Glu Thr	Pro Ala Arg Gly Gly
	515	520
Gly Ser Cys Ala Val	Asp Pro Val Leu Tyr	Ser Met Leu Lys Asp Leu
	530	535
Arg Lys Lys Leu Ser	Lys Lys Leu Glu Val	Pro Pro Tyr Val Ile Phe
	545	550
Gln Asp Pro Ser Leu	Glu Ala Met Ala Thr	Ile Tyr Pro Val Thr Leu
	565	570
Glu Glu Leu Gln Asn	Ile Pro Gly Val Gly	Ala Gly Lys Ala Lys Arg
	580	585
Tyr Gly Glu Glu Phe	Cys Lys Leu Ile Lys	Arg His Cys Glu Glu Asn
	595	600
Glu Ile Glu Arg Pro	Glu Asp Leu Arg Val	Arg Thr Val Ala Asn Lys
	610	615
Ser Lys Met Lys Val	Ala Ile Ile Gln Ala	Ile Asp Arg Lys Val Ala
	625	630
Leu Asp Asp Ile Ala	Leu Ser Lys Gly Ile	Glu Phe Ser Glu Leu Leu
	645	650
Asp Glu Val Glu Ala	Ile Val Tyr Ser Gly	Thr Lys Leu Asn Ile Asp
	660	665
Tyr Phe Leu Asp Glu	Ile Met Asp Glu Asp	His Met Leu Asp Ile Tyr
	675	680
Asp Tyr Phe Lys Glu	Ser Thr Thr Asp Lys	Ile Asp Asp Ala Leu Asp
	690	695
Glu Leu Gly Asp Glu	Phe Thr Glu Glu Glu	Val Arg Leu Val Arg Ile
	705	710
Lys Phe Ile Ser Glu	Met Ala Asn	
	725	

&lt;210&gt; 8114

&lt;211&gt; 398

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8114

Asn Leu Phe Tyr	Met Lys Ala Arg	His Phe Phe Tyr	Pro Phe Leu Ser
1	5	10	15
Leu Phe Ser Val	Ala Met Phe Ala	Ser Cys Ser Ser	Ser Val Pro Lys
	20	25	30
Ser Pro Glu Gln	Arg Val Glu Tyr	Asn Glu Asp Phe	Phe Ser Ile Ala
	35	40	45
Val Ser Asp Val	Lys Asp Thr Ile	Lys Val Tyr Ile	Glu Asp Leu Val
	50	55	60
Asp Ser Leu Val	Ile Leu Pro Leu	Asp Asn Asp Lys	Lys Ala Leu Cys
	65	70	75
Ala Pro Leu Thr	Val Tyr Ile Thr	Glu Gln His Ile	Gly Leu Thr Pro
	85	90	95
Ser Glu Arg Gly	Thr Tyr Lys Leu	Phe Ser Arg Asp	Gly Ser Phe
	100	105	110
Leu Cys Asn Val	Gly Gly Phe Gly	Gln Gly Pro Gly	Glu Tyr Thr Ala
	115	120	125
Leu Leu Tyr His	Gln Ile Asp Glu	Lys Ala Lys Arg	Ile Tyr Leu Asn

130		135		140
Thr Phe Glu Ala Ser Gln Ile Met Val Tyr Asp Phe Lys Gly Gln Tyr				
145		150		155
Leu His Asp Ile Pro Leu Ala Ser Ile Leu His Lys Gly Ser Phe Lys				
		165		170
Val Asp Ser Glu His Lys Met Ile Tyr Cys Phe Asp Val Pro Ala Gly				
		180		185
Gln Ser Pro Phe Val Trp Lys Gln Asp Phe Glu Gly Asn Ile Lys Gly				
		195		200
Lys Ile His Ser Tyr Pro Tyr Thr Leu Lys Pro Asp Phe Gly Asn Asp				
		210		215
Val Gln Thr Met Phe Asn Thr Glu Ala Phe Tyr Thr Ser Val Ser Ala				
225		230		235
Gly Phe Glu Gln Leu Glu Gly Met Asn Asp Thr Leu Tyr His Tyr Tyr				
		245		250
Pro Glu Thr Asp Val Leu Thr Pro Val Phe Tyr Ala Asp Phe Gly Lys				
		260		265
Glu Gly His Gln His Arg Tyr Leu Asn Thr Pro Leu Asn Tyr Tyr Val				
		275		280
Gly Leu Ser Ser Gly Tyr Thr Asn Asp Arg Gly Pro Phe Thr Thr Leu				
		290		295
Asp Tyr Thr Val Ile Lys Val Asp Lys Lys Thr His Glu Ala Ser Tyr				
305		310		315
Ile Lys Leu Phe Ser Arg Gly Tyr Gly Gly Leu Ser Leu Asp Leu Tyr				
		325		330
Tyr Ala Gln Phe Arg Phe Gly Tyr Phe Tyr Leu Trp Met Glu Pro Ile				
		340		345
Glu Leu Lys Glu Gln Leu Ser Gln Ile Leu Lys Leu Ser Glu Met Asp				
		355		360
Thr Ala Met Arg Gly Lys Val Glu Lys Leu Tyr Asn Gly Leu Ser Glu				
		370		375
Asn Gly Asn Ser Val Leu Leu Phe Gly Arg Leu Lys Gln Lys				
385		390		395

&lt;210&gt; 8115

&lt;211&gt; 424

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8115

Pro Ile Asn Tyr Arg Pro Met Lys Leu Asp Tyr Ile Ala Leu Phe Leu				
1		5		10
Val Leu Phe Phe Leu Ala Ala Cys Gly Ser Lys Ser Ser Ser Pro Asp				
		20		25
Met Met Asp Asp Asn Ala Leu Pro Thr Glu Glu Thr Phe Lys Glu Ile				
		35		40
Asp Leu Ala Asn Asn Leu Glu Asp Cys Gly Lys Pro Leu Leu Leu Ser				
		50		55
Asp Ile Val Lys Asp Val Glu Tyr Val Lys Leu Glu Thr Gln Asp Asn				
65		70		75
Ile Leu Val Gly Asp Ile Lys Gln Leu Lys Arg Thr Glu Gln Tyr Ile				
		85		90
Phe Ile Tyr Ser Arg Arg Gln Asn His Ile Met Met Phe Asp Lys Ser				
		100		105
Gly Lys Phe Ile Arg Arg Ile Gly Arg Val Gly Gln Gly Pro Gly Glu				
		115		120
Met Ser Asn Ile Gln Ser Phe Thr Thr Asn Asp Asn Arg Val Phe Ile				
		130		135
Tyr Pro Leu Ser Arg Ser Ser Ser Phe Met Ile Tyr Asp Thr Gln Asn				
				140

145		150		155		160									
Asn	Asp	Phe	Ile	Lys	Glu	Val	Ser	Leu	Lys	Tyr	Pro	Val	Ser	Val	Asn
		165							170					175	
Asp	Lys	Ile	Asp	Ile	Met	Asp	Asn	Cys	Leu	Ile	Tyr	Tyr	Pro	Gly	Ile
		180						185						190	
Ile	Tyr	Phe	Pro	Gly	Asn	Lys	Glu	Gly	Phe	Ile	Ser	Ala	Cys	Val	Ile
		195					200					205			
Asn	Thr	Asp	Gly	Gln	Ile	Val	Arg	Glu	Gln	Val	Pro	Glu	Met	Pro	Val
		210				215					220				
Glu	Ala	Lys	Lys	Ile	Asp	Met	Ala	Ile	Asp	Pro	Asp	Ile	Ser	Trp	Asn
225				230						235					240
Tyr	Gln	Gly	Lys	Ser	Asn	Ile	Tyr	Ser	Leu	Ile	Asn	Asp	Thr	Ile	Tyr
			245					250						255	
Gly	Ile	Thr	Cys	Asp	Ser	Ile	Phe	Pro	Arg	Tyr	His	Leu	Ser	Leu	Gly
		260					265					270			
Lys	Tyr	Lys	Leu	Pro	Pro	Glu	Lys	Tyr	Asn	Phe	Cys	Asn	Asn	Leu	Asp
		275				280					285				
Leu	Gly	Asp	Phe	Ile	Leu	Ile	Lys	Ser	Val	Cys	Glu	Thr	Lys	Asp	Tyr
		290			295				300						
Leu	Leu	Phe	Ser	Tyr	Trp	Phe	Asn	Cys	Lys	Met	Trp	Phe	Ser	Arg	Tyr
305				310				315						320	
Asp	Lys	Asn	Lys	Asp	Lys	Ile	Asp	Ser	Trp	Glu	Gln	Val	Pro	Phe	Glu
			325					330						335	
Val	Arg	Tyr	Trp	Met	Ile	Arg	Asp	Ala	Pro	Gly	Val	Thr	Asn	Asp	Ile
		340					345					350			
Asp	Gly	Thr	Gln	Ser	Phe	Arg	Gly	Asn	Asn	Asn	Met	Lys	Asp	Val	Gly
		355				360					365				
Glu	Asn	Cys	Phe	Cys	Phe	Val	Ile	Thr	Pro	Asp	Asn	Leu	Asp	Gln	Val
		370			375					380					
Arg	Arg	Asn	Val	Ala	Glu	Ala	Lys	Val	Lys	Phe	Pro	Glu	Lys	Gln	Ala
385				390					395					400	
Glu	Leu	Leu	Lys	Leu	Leu	Asp	Glu	Met	Gly	Glu	Asp	Asp	Asn	Pro	Ile
			405				410						415		
Ile	Ala	Phe	Tyr	Lys	Leu	Lys	Asp								
		420													

<210> 8116  
 <211> 312  
 <212> PRT  
 <213> B.fragilis

<400> 8116  
 Asn Ala Ser Tyr Phe Asp Ser Met Arg Phe Phe Val Ser Ile Asn Lys  
 1 5 10 15  
 Trp Lys Thr Met His Lys Ala Gly Phe Val Asn Ile Val Gly Asn Pro  
 20 25 30  
 Asn Val Gly Lys Ser Thr Leu Met Asn Val Leu Val Gly Glu Arg Ile  
 35 40 45  
 Ser Ile Ala Thr Phe Lys Ala Gln Thr Thr Arg His Arg Ile Met Gly  
 50 55 60  
 Ile Tyr Asn Thr Asp Asp Met Gln Ile Val Phe Ser Asp Thr Pro Gly  
 65 70 75 80  
 Val Leu Lys Pro Asn Tyr Lys Leu Gln Glu Ser Met Leu Asn Phe Ser  
 85 90 95  
 Thr Ser Ala Leu Ala Asp Ala Asp Val Leu Leu Tyr Val Thr Asp Val  
 100 105 110  
 Ile Glu Thr Pro Asp Lys Asn Asn Glu Phe Ile Gln Lys Val Arg Gln  
 115 120 125  
 Gln Ser Ala Pro Ile Leu Leu Leu Ile Asn Lys Ile Asp Leu Thr Asp

130		135		140
Gln Glu Lys Leu Val Lys Leu Val Glu Glu Trp Lys Glu Leu Leu Pro				
145		150		155
Gln Ala Glu Ile Ile Pro Ile Ser Ala Ala Thr Lys Phe Asn Val Asp				
		165		170
Tyr Val Met Lys Arg Ile Lys Asp Leu Leu Pro Asp Ser Pro Pro Tyr				
		180		185
Phe Asp Lys Asp Gln Trp Thr Asp Lys Pro Ala Arg Phe Phe Val Asn				
		195		200
Glu Ile Ile Arg Glu Lys Ile Leu Leu Tyr Tyr Asp Lys Glu Ile Pro				
		210		215
Tyr Ser Val Glu Val Val Val Glu Glu Phe Lys Glu Asp Ala Lys Lys				
225		230		235
Ile His Ile His Ala Val Ile Tyr Val Glu Arg Asp Ser Gln Lys Gly				
		245		250
Ile Ile Ile Gly Lys Gln Gly Lys Ala Leu Lys Lys Val Ala Thr Glu				
		260		265
Ala Arg Arg Asp Leu Glu Arg Phe Phe Gly Lys Thr Val Phe Leu Glu				
		275		280
Thr Tyr Val Lys Val Asp Lys Asp Trp Arg Ser Ser Asp Lys Glu Leu				
		290		295
Arg Asn Phe Gly Tyr Gln Leu Asp				300
305		310		

&lt;210&gt; 8117

&lt;211&gt; 423

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8117

Tyr Arg Glu Tyr Arg Arg Arg Ser Ile Leu Glu Ile Trp Ile Lys Asp				
1		5		10
Asp Ser Phe Met Lys His Ile Tyr Leu Ile Gly Asn Gly Ser Arg Ala				
		20		25
Ala Gln Tyr Gly Val Gly Thr Tyr Ile Arg Gln Met Leu Glu Phe Phe				
		35		40
Arg Gln Thr Ser Ser Val Arg Leu Thr Ile Val Glu Leu Asn Ser Glu				
		50		55
Val Lys Glu Val Thr Glu Glu Cys Asp Asn Ser Gly Lys Val Cys Tyr				
65		70		75
Leu Lys Ile Pro Ala Gln Lys Ser Glu Gly Arg Lys Gly Asp Val Ala				
		85		90
His Cys Tyr Arg Asn Ile Ala Tyr Leu Leu Ala Leu His Phe Leu Lys				
		100		105
Asp Glu Gln Asn Val Leu His Leu Asn Tyr Leu His His Ala Pro Leu				
		115		120
Ala Asp Trp Leu Lys Lys Ile Gly Val Glu Phe Tyr Leu Leu Val Thr				
		130		135
Ile His Tyr Leu Asp Trp Cys Phe Met Leu Lys Gly Asn Thr Arg Leu				
145		150		155
Phe Arg Ser Ile Ile His Lys Glu Glu Gln Ser Asn Glu Trp Gly Lys				
		165		170
Lys Ile Arg Asn Ser Tyr Glu Arg Asp Lys Arg Leu Phe Gln His Ser				
		180		185
Asp Lys Val Ile Cys Leu Ser Gln Tyr Thr Gln Asn Leu Leu Arg Glu				
		195		200
Asp Tyr Gly Val Glu Lys Glu Lys Leu Val Val Val Tyr Asn Gly Leu				
		210		215
Lys Asp Glu Ala Ile Lys Leu Ser Lys Glu Glu Arg Leu Glu Lys Arg				
		220		

225		230		235		240									
Ser	Ala	Leu	Gly	Phe	Arg	Glu	Thr	Asp	Lys	Ile	Ile	Leu	Phe	Val	Gly
				245					250					255	
Arg	Leu	Asp	Arg	Ile	Lys	Gly	Val	Gln	Tyr	Leu	Ile	Glu	Ala	Phe	Arg
				260					265					270	
Gln	Val	Ile	Arg	Lys	Asn	Pro	Asn	Ser	Arg	Leu	Val	Ile	Val	Gly	Asp
				275					280					285	
Gly	Asp	Tyr	Asp	Lys	Tyr	Leu	Lys	Gln	Cys	Ala	Gly	Ile	Trp	Ser	Tyr
				290					295					300	
Val	Val	Leu	Thr	Gly	Lys	Val	Glu	Lys	Glu	Val	Leu	Tyr	Thr	Phe	Tyr
305															320
Gln	Ile	Ala	Asp	Val	Gly	Val	Leu	Pro	Ser	Phe	His	Glu	Gln	Cys	Ser
				325						330				335	
Tyr	Val	Ala	Ile	Glu	Met	Leu	Met	His	Gly	Leu	Pro	Leu	Ile	Gly	Thr
				340					345					350	
Gly	Ser	Thr	Gly	Leu	Lys	Glu	Met	Val	Glu	Gly	Met	His	Cys	Leu	Pro
				355					360					365	
Leu	Lys	Glu	Glu	Asp	Asp	Ser	Val	Asp	Leu	Pro	Ile	Asp	Leu	Leu	Val
				370					375					380	
Gln	Trp	Leu	Ile	Glu	Asp	Gln	Glu	His	Leu	Arg	Ser	Glu	Lys	Tyr	Arg
385										395					400
Arg	Arg	Phe	Glu	Glu	Arg	Tyr	Thr	Leu	Arg	Lys	Met	Ser	Glu	Asn	Met
				405					410					415	
Phe	Ser	Ile	Tyr	Leu	Asn	Leu									
				420											

&lt;210&gt; 8118

&lt;211&gt; 495

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8118

Ile	His	Arg	Tyr	Met	Lys	Asn	Asp	Ile	Ala	Phe	Ser	Thr	Pro	Phe	His
1				5					10					15	
Ala	Tyr	Val	Tyr	Ser	Phe	Arg	His	Lys	Glu	Tyr	Leu	Pro	Leu	His	Pro
				20				25					30		
Ile	Leu	Lys	Arg	Ile	Tyr	Thr	Val	Val	Glu	Glu	Lys	Lys	Asn	Ile	Glu
				35				40				45			
Glu	Asp	Glu	Glu	Leu	Lys	Cys	Tyr	Pro	Lys	Glu	Gln	Ile	Leu	His	Tyr
				50				55			60				
Leu	Gln	Lys	Tyr	Lys	Phe	Leu	Lys	Glu	Asn	Glu	Phe	Ile	Gly	Glu	Lys
65					70				75					80	
Val	Lys	Thr	Glu	Phe	Gly	Glu	Ile	Thr	Glu	Thr	Met	Val	Arg	Arg	Glu
				85					90					95	
Val	Glu	Asn	Leu	Thr	Val	Leu	Thr	Phe	Glu	Val	Thr	Glu	Arg	Cys	Asn
				100				105					110		
Leu	Arg	Cys	Arg	Tyr	Cys	Ala	Phe	Gly	Asp	Leu	Tyr	Tyr	Gly	Tyr	Asp
				115				120					125		
Glu	Arg	Lys	Gly	Glu	Asn	Leu	Asp	Phe	Pro	Lys	Ala	Lys	Gln	Ile	Leu
				130				135			140				
Asp	Phe	Leu	Phe	Gly	Ile	Trp	Glu	Lys	Ile	Pro	His	Leu	Ser	Val	Ala
145					150				155					160	
Arg	Thr	Leu	Thr	Val	Gly	Phe	Tyr	Gly	Gly	Glu	Pro	Leu	Met	Asn	Met
				165					170					175	
Asp	Leu	Ile	Lys	Gln	Ile	Val	Ser	Tyr	Ile	Asp	Glu	His	Lys	Pro	Glu
				180				185					190		
Gly	Met	Lys	Phe	Ala	Tyr	Asn	Met	Thr	Thr	Asn	Ala	Met	Leu	Leu	Arg
				195				200				205			
Val	Tyr	Gln	Asp	Phe	Leu	Val	Glu	His	Lys	Phe	His	Leu	Leu	Val	Ser

210	215	220
Leu Asp Gly Thr Glu Ala Asp Asp Cys His Arg Val Thr Val Asn Gly		
225	230	235
Lys Ser Ser Phe Ala Gln Val Phe Glu Gln Ile Lys Asn Leu Gln Phe		240
	245	250
Cys Tyr Pro Glu Tyr Phe Lys Lys Tyr Val Ser Phe Asn Ser Val Ile		255
	260	265
His Ser Glu Ser Asn Ile Glu Arg Ile Val Asp Phe Phe Arg Ala Glu		270
	275	280
Phe Asp Lys Gln Thr Ser Leu Ser Glu Leu Asn Asn Ser Ser Ile Ala		285
	290	295
Gln Glu Gly Lys Tyr Ala Glu Met Arg Lys Ser Val Phe Gln Ser Ile		300
305	310	315
Ala Leu Ser Pro Arg Arg Lys Glu Ile Asp Gln Gln Leu Met Tyr Asn		320
	325	330
Ala Pro Asp Ile Ser Thr Val Thr Tyr Phe Leu His His Leu Ser Asn		335
	340	345
Glu Val Phe Arg Asp Tyr Arg Ser Met Phe Tyr Gly Lys Arg Asn Phe		350
	355	360
Lys Leu Leu Pro Thr Gly Thr Cys Ile Pro Phe Asn Arg Lys Met Tyr		365
	370	375
Val Thr Val His Gly Lys Ile Leu Val Cys Glu Arg Ile Asp His Asp		380
385	390	395
Phe Ala Val Gly His Val Thr Asp Glu Gly Val Glu Leu Asn Phe Ala		400
	405	410
His Val Ala Glu Asn His Arg Lys Tyr Cys Ser Lys Leu Leu Ser Gln		415
	420	425
Cys Lys Gln Cys Tyr Met Gln Glu Ser Cys Ser Gln Cys Met Tyr Tyr		430
	435	440
Thr Asn Val Leu Ala Asp Lys Val Val Cys Arg Asn Phe Lys Asn Arg		445
	450	455
Glu Met Phe Ala Gly Tyr Leu Ala Met Asn Val Asp Tyr Leu Glu His		460
465	470	475
Asn Arg Trp Ala Tyr Ser Lys Val Met Lys Glu Ile Phe Ile Phe		480
	485	490
		495

&lt;210&gt; 8119

&lt;211&gt; 413

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8119

Asn Leu Phe His Met Lys Ala Arg His Phe Phe Tyr Pro Leu Leu Phe	
1	5
Leu Phe Ser Val Ala Met Phe Ala Ser Cys Ser Ser Tyr Val Pro Lys	
	10
	15
Glu Gly Asp Ile Ile Glu Asp Ser Ala Phe Arg Ser Val Asp Leu Arg	
	20
	25
	30
Ile Ile Glu Lys Ala Glu Gly Thr Val Met Ser Leu Ser Asp Leu Val	
	35
	40
	45
Glu Ser Tyr Glu Val Ile Lys Leu Glu Asn Arg Asp Glu Ala Leu Ile	
	50
	55
	60
Lys Thr Tyr Pro Phe Gly Ile Phe Ala Ser Asp Asn Tyr Ile Leu Leu	
	65
	70
	75
	80
Asn Pro Asp Ala Ile Ser Pro Ile Lys Leu Phe Thr Arg Lys Gly Gln	
	85
	90
	95
Tyr Val Ala Asp Ile Gly Gly Ile Gly Gln Gly Pro Gly Glu Tyr Lys	
	100
	105
	110
Thr Ile His Phe Cys Met Ile Asp Glu Lys Gln Lys Arg Ile Tyr Leu	
	115
	120
	125

130		135		140
Gly Pro Gly Arg Ala Asn Lys Ile Leu Thr Tyr Asp Leu Lys Gly Asn				
145		150		155
Tyr Leu Ser Asp Glu Ala Ile His Phe Lys Glu Ile Val His Lys Pro				
	165		170	175
Cys Ile Trp Met Asp His Asp Lys Lys His Val Thr Val Val Gly Leu				
	180		185	190
Pro Phe Ser Glu Asn Glu Asn Ser Asn Phe Glu Ile Ser Asn Asn Val				
	195		200	205
Cys Trp Val Gln Asn Arg Glu Gly Asp Ile Val His Arg Ile Ser Ala				
	210		215	220
Asn His Tyr Gly Leu Ile Gly Asp Tyr Ser Asn Gly Leu Val Ala Cys				
225		230		235
Arg Asn Val Asp Ala Ile Ser Phe Ser Ile Phe Glu Asp Pro Met Leu				
	245		250	255
Arg Thr Arg Pro Asp Thr Leu Tyr His Tyr Asp Ala Val Lys Asn Ile				
	260		265	270
Ile Thr Pro Arg Phe Thr Ile Asp His Val Val Ser Glu Asn Gln Ser				
	275		280	285
Ala Cys Thr Val Leu Tyr Glu Thr Ser Arg Ser Tyr Trp Ala Arg Val				
	290		295	300
Thr Leu Tyr Pro Asn Asp Ile Ser Ser Asn Ser Ser Pro Val Arg Leu				
305		310		315
Thr Thr Phe Asn Val Cys Val Ser Lys Lys Asp Gly Ser Val Lys Arg				
	325		330	335
Ile Asp Arg Phe Thr Asn Asp Phe Leu Gly Leu Ser Tyr Pro Phe Leu				
	340		345	350
Thr Met Arg Asn Gly Tyr Val Cys Ile Ser Tyr Asp Pro Leu Glu Leu				
	355		360	365
Met Asp Ala Leu Asp Lys Val Leu Thr Gln Thr Asp Leu Lys Pro Glu				
	370		375	380
Ile Arg Lys Arg Ala Thr Gly Leu Arg Asn Ser Leu His Glu Asn Asp				
385		390		395
Asn Asp Ile Leu Met Ile Gly Lys Leu Lys Ser Asn Tyr				
	405		410	

&lt;210&gt; 8120

&lt;211&gt; 78

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8120

Arg Ile Glu Gln Thr Tyr Ser Phe Ser Gly Lys Val Tyr Ile Tyr Pro			
1	5	10	15
Val Asp His Leu Ile Ile Leu Ser Gln Ile Pro Cys Arg Leu Leu Gln			
	20	25	30
His Ile Val Ser Leu Ile Arg Asn Pro Pro Leu Met Trp Thr Leu Ser			
	35	40	45
Met Thr Gly Ser Leu Asp Tyr Ser Lys Ile Val Ser Asn His Val Asn			
	50	55	60
Ile Ile Ile Ser Phe Asn His Leu Glu Pro His Phe Tyr Gln			
65	70	75	

&lt;210&gt; 8121

&lt;211&gt; 88

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8121



Ser Leu Met Gln Arg Ile Ile Val Leu Ser Ser Tyr Leu Lys Leu Ser  
 1 5 10 15  
 Ile Ile Gln Leu Thr Met Arg Lys Thr Gly Leu Leu Val Ile Ser Leu  
 20 25 30  
 Leu Phe Cys Ala Ser Cys Ala Asp Lys His Asp Arg Lys Gly Gln Thr  
 35 40 45  
 Pro Leu Val Glu Val Asp Gly Asn Phe Leu Tyr Lys Glu Asp Leu Gln  
 50 55 60  
 Gly Arg Cys Ser Pro Pro Val Cys Gln Lys Met Thr Val Phe Phe Ser  
 65 70 75 80  
 Pro Ser Thr Thr Ser Val Ala Gly  
 85

<210> 8122  
 <211> 214  
 <212> PRT  
 <213> B.fragilis

<400> 8122  
 Gln Arg Gln Gln Glu Asp Thr Ser Met Val Gly Ser Leu Leu Ile Gly  
 1 5 10 15  
 Asn Lys His Phe Leu Val Arg Glu Leu Val Gln Ala Gly Arg Ser Thr  
 20 25 30  
 Ser Cys Leu Gly Leu Thr Asn Gly Lys Met Gly Ile Ala Ile Ala Leu  
 35 40 45  
 Phe Arg Tyr Gly Arg Leu Ser Gly Glu Leu Ala Tyr Glu Glu Val Ala  
 50 55 60  
 Ser Glu Leu Leu Asp Asp Val Cys Gln Asn Leu Asn Tyr Ser Met Pro  
 65 70 75 80  
 Ile Ser Phe Asn Asp Gly Leu Cys Gly Ile Gly Trp Gly Ile Glu Tyr  
 85 90 95  
 Leu Ile Gln His Gly Tyr Val Asp Ala Asp Gly Asp Glu Ile Leu Arg  
 100 105 110  
 Asp Ile Asp Leu Tyr Leu Ile Arg Cys Ile His Ile Tyr Gly Leu Ser  
 115 120 125  
 Gly Leu Ser Leu Arg Asn Gly Ile Val Gly Leu Gly Arg Tyr Ile Leu  
 130 135 140  
 Ile Arg Ile Thr Pro Thr Phe Leu Phe Gly Asp Thr Phe Ser Ser Ala  
 145 150 155 160  
 Leu Leu Lys Glu Tyr Phe Ile Tyr Leu Ile Asp Trp Leu Glu Glu Glu  
 165 170 175  
 Leu Lys Arg Val Asp Glu Pro Val Asp Asp Leu Leu Asp Phe Leu Phe  
 180 185 190  
 Asp Leu Tyr Pro Thr Gly Phe Tyr Gln Thr Lys Val Ser Asp Leu Ile  
 195 200 205  
 Lys Tyr Cys Met Asn Lys  
 210

<210> 8123  
 <211> 83  
 <212> PRT  
 <213> B.fragilis

<400> 8123  
 Val Pro Glu Gln Gln Lys Val Ala Gln Asp Phe Ala Met Ser Glu Phe  
 1 5 10 15  
 Ser Leu Ile Leu Val Leu Gln Lys Glu Asn Lys Gln Asn Ser Asn Met  
 20 25 30  
 Thr Trp Gln Lys Tyr Lys Leu Asn Leu Arg Asn Ser His Leu Leu Glu

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<210> 8124
<211> 571
<212> PRT
<213> B.fragilis
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Leu 1	Gln	Phe	Asn	Asn 5	Gly	Thr	Asn	Phe	Leu 10	Thr	Ile	Phe	Arg	Ile 15	Asn
His	Cys	Glu	Ser 20	Phe	Gly	Asn	Leu	Thr 25	Asp	Ile	His	Phe	Ile 30	His	His
Phe	Ser	Asn 35	Leu	Leu	Arg	Gln	Ile 40	Leu	His	Phe	Glu	Phe 45	Ser	Gly	Leu
Val 50	Leu	Arg	Val	Leu	His	Gln 55	Thr	Val	Ala	Val	Ala 60	Arg	Ile	Phe	Val
Leu 65	Arg	Gln	Ser	Arg	Ser 70	Ser	Leu	Ile	Lys	Gly 75	Lys	Leu	Ile	Ala	Thr
Asp	Ile	Val	Gly	Asn 85	Arg	Val	Glu	Thr	Arg 90	Ile	Gly	Phe	Ile	Gln	Leu
Leu	Ile	Arg	His 100	Phe	Gly	Leu	Gln	Gln 105	Asp	Met	Thr	Gly	Val 110	Asp	Thr
Val	Ala	Thr 115	Phe	Phe	Asp	Gln 120	Leu	Asp	Asp	Met	Glu	Thr 125	Ile	Leu	Arg
Leu	Tyr 130	Asp	Phe	Arg	Asp 135	Leu	Leu	Gly	Ile	Leu	Gln 140	Val	Glu	Ser	Asp
Ile 145	Gly	Val	Phe	Gly	Asn 150	His	Leu	Pro	Phe 155	Thr	His	Lys	Thr	Gly	Phe
Thr	Thr	Phe	Asp	Ser 165	Arg	Ala	Ala	Ile	Phe 170	Gly	Ile	Gln	Gln	Gly	Lys
Arg	Arg	Glu	Ile 180	Thr	Phe	Thr	Leu	Ile 185	Asp	Thr	Val	Gly	Val 190	Phe	Thr
Gln	Ala	Ser 195	Phe	Tyr	Ile	Phe	Asn 200	Phe	Gly	Asn	Arg	Tyr 205	Phe	Arg	Leu
Leu 210	Arg	Asn	Asn	Leu	Tyr 215	Phe	Tyr	Leu	Gly	Gly	Asp 220	Val	Arg	Asn	Thr
Val 225	Leu	Gly	Lys	Leu 230	Leu	Lys	Val	Thr	Ala	Tyr 235	Phe	Arg	Arg	Ser	His
Phe	Asp	Ile	Thr 245	Tyr	Gln	Phe	Leu	Leu	His 250	Pro	Leu	Tyr	Asn	Gln	Ser
Val	Thr	Gly	Ile 260	Leu	Ala	His	Gly	Phe 265	Thr	Asn	Leu	Cys	Arg 270	Gly	Leu
Ile	Lys	Leu	Cys 275	Phe	His	Ser	Phe	Ser 280	Ala	Thr	Gln	Ser 285	Leu	Asn	Ile
Ile	Thr 290	Asp	Leu	Ile	Val	Asp 295	Thr	Leu	Tyr	Asp	Phe 300	Cys	Leu	Gly	His
Phe 305	Asn	Thr	Val	Glu	His 310	Ser	Leu	Val	His	Ile 315	Lys	Phe	Leu	Tyr	Gly
Gln	Leu	Phe	Gly	Asn 325	His	Thr	Ile	Arg	Ile 330	Thr	Ile	Lys	Leu	Thr	Pro
Phe	Ile	Gln	Ser 340	Gly	Gln	Ser	Cys	Phe 345	Phe	His	Ile	Gly	Leu	Gln	Asp
Ser	Phe	Val	Ala	Asn	Asp	Pro	Asn	His	Phe	Val	Asn	His	Ile	Val	Leu

355		360		365
Cys Ile Gly Cys His Val Ser Asn Gln Cys Gln Gly Lys His Asn Asn				
370		375		380
Lys Leu Lys Val His Lys Leu Leu His Ser Val Tyr Leu Ile Ile Tyr				
385		390		395
Asn Leu Leu Ser Phe Tyr Cys Thr Leu Val Gln Ile Val Phe His Leu				400
	405		410	
Phe His Lys Val Asn Pro Leu Asp Val Asp Lys His Ile Leu Asp Phe				415
	420		425	
Arg Leu Ser Lys Phe Ile Arg Phe Leu Phe Ala Arg His Thr Glu Ile				430
	435		440	
Thr Asp Ile Gln Lys Ile Val Lys Cys Arg Ile Phe Gln Phe Asn Met				445
	450		455	
Pro Val Phe Ile His Ile Gly Phe Arg Gly Phe Arg Phe Gln Arg Asp				460
465		470		475
His Ile Gln His Ile Gly His Pro His Pro Phe Ile Ile Lys Ile Leu				480
	485		490	
Ile Leu His Cys Val Leu Gln Thr Ile Leu Phe Gln Met Leu Asn Gly				495
	500		505	
Ile Leu Ser Leu Arg Phe Val Pro Leu Thr His Val Ala Gln Leu Gly				510
	515		520	
Ser Gly Gln Arg Asn Phe Asp Lys Gln Thr Phe His Gln Trp Thr Val				525
	530		535	
Gln Leu Lys Gln Phe Phe Val Leu Phe Val Ile Val Cys Tyr Phe Leu				540
545		550		555
Phe Gly Asp Leu Ala Arg Gln Phe Leu Ala Asp				560
	565		570	

<210> 8125  
 <211> 75  
 <212> PRT  
 <213> B.fragilis

<400> 8125
Phe Asn Asn Lys Arg Ile Lys Glu Thr Glu Ser Leu Gln Lys Arg Leu
1 5 10 15
Cys Ala Gly Ser Lys Asn Leu Val Ile Glu Ile Glu Lys Leu Ile Asp
20 25 30
His Leu Ser Ala Ala Lys Lys Arg Ile Lys Thr Gly Ile Ala Ile Thr
35 40 45
Phe Ser Leu Phe Leu Tyr Thr Lys Pro Met Asn Phe Ser Asp Leu Glu
50 55 60
Arg Phe Arg Gly Glu Asn Arg Lys Tyr Gly Leu
65 70 75

<210> 8126  
 <211> 458  
 <212> PRT  
 <213> B.fragilis

<400> 8126
Ile Ser Ile Asn Glu Ser Lys Ser Ser Ile Cys Trp Asp Ile Trp Ala
1 5 10 15
Leu Cys Thr Asn Leu Pro Gln Val Gly Val Lys Leu Glu Lys Glu Glu
20 25 30
Lys Ala Val His Ala Asn Ser Ile Arg Glu Ile Phe Tyr Thr Phe Leu
35 40 45
Asn Arg Phe Ile Met Lys Asn Leu Tyr Leu Ile Leu Val Leu Ser Ala
50 55 60

Leu Val Ala Cys Thr Gly Ser Ser Gln Lys Glu Lys Pro Ala Cys Val  
 65 70 75 80  
 Asn Thr Pro Val Glu Pro Phe Thr Gly Leu Pro Val Phe Asp Leu Gln  
 85 90 95  
 Gly Gln Tyr Pro Glu Lys Glu Ile Ile Leu Gln Asp Ile Ala Asp Val  
 100 105 110  
 Arg Tyr Val Val Leu Glu Thr Gly Asp Ser Ser Leu Val Gly Thr Arg  
 115 120 125  
 Thr Ile Leu Met Thr Asp Ser Leu Leu Val Thr Val Asn Lys Lys Ser  
 130 135 140  
 Asp Val Ile Phe Phe Asp Lys Ser Gly Lys Tyr Leu His Ser Phe Asn  
 145 150 155 160  
 His Thr Gly Met Ser Gly Glu Glu Tyr Gly Asp Val Val Ser Gly Tyr  
 165 170 175  
 Cys Ile Asp Glu Lys Ala Arg Glu Ile Phe Ile Tyr Asp Gly Leu Gln  
 180 185 190  
 Ser Arg Ile Gln Val Tyr Gly Tyr Gly Gly Ala Tyr Arg Arg Thr Leu  
 195 200 205  
 Lys Leu Pro Gln Asn Arg Met Phe Ala Ser Ser Ile Phe Glu Tyr Asp  
 210 215 220  
 Glu Asn Phe Leu Phe Gly Glu Asp Tyr Arg Leu Val Asp Tyr Gln Ile  
 225 230 235 240  
 Gly Lys Tyr Pro Val Asn Lys Thr Pro Tyr Tyr Lys Ile Ser Lys Lys  
 245 250 255  
 Asp Gly Lys Leu Thr Ser Val Pro Ile Thr Val Lys Gly Arg Ile Arg  
 260 265 270  
 Asp Gly Leu Tyr Thr Val Gly Asp Gly Glu Ser Gly Gly Tyr Val Ser  
 275 280 285  
 Leu Ser Met Ser Pro Val Ala Arg Leu Gly Ser Asp Ile Leu Ile Ala  
 290 295 300  
 Asp Tyr Ser Leu Asp Thr Ala Tyr Val Tyr Arg Asp Asp His Leu Ile  
 305 310 315 320  
 Pro Leu Thr Val Arg Arg Asn His Thr Ser Glu Asn Asn Ile Pro Ile  
 325 330 335  
 Leu Ala Thr Val Asp Val Met Thr Gly Arg Tyr Leu Leu Trp Tyr Thr  
 340 345 350  
 Ile Val Lys Asp Ile Asp Val Lys Asn Asn Arg Val Ser Asp Pro Val  
 355 360 365  
 Ser Tyr Leu Tyr Asp Arg Phe Thr Asn Glu Tyr Cys Arg Val Asp Leu  
 370 375 380  
 Val Asn Arg Asp Gly Val Ser Ala Thr Asn Val Pro Ala Phe Gln Met  
 385 390 395 400  
 Arg Leu Ser Ala Asn Tyr His Val Val Pro Glu Asn Tyr Ala Ile Gln  
 405 410 415  
 Cys Tyr Pro Ala Glu Lys Leu Ile Glu Leu Asn Gly Gln Gly Lys Leu  
 420 425 430  
 Lys Gly Glu Leu Lys Glu Ile Ala Ser Lys Leu Asn Asp Glu Asp Asn  
 435 440 445  
 Pro Val Leu Leu Ile Ala Lys Phe Lys Glu  
 450 455

&lt;210&gt; 8127

&lt;211&gt; 264

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8127

Ile Asn Lys Lys Thr Met Lys Tyr Ser Glu Gln Ile Thr Ile Gly Ile  
 1 5 10 15

Pro Val Arg Ile Asp Ser Pro Ala Arg Met Arg Asn Leu Gln Val Leu  
 20 25 30  
 Leu Arg His Leu Ser Leu Ser Gly Ile Lys Ile His Val Trp Glu Ala  
 35 40 45  
 Gly Asp Val Arg Ser Glu Leu Ser Gly Phe Ala Ser Asn Lys Asp Thr  
 50 55 60  
 Tyr Thr Tyr Glu Arg Asp Glu Ser Leu Val Tyr His Lys Thr Leu Tyr  
 65 70 75 80  
 Val Asn Arg Leu Leu Lys Ala Ala Ser Thr Pro Val Val Ala Ile Trp  
 85 90 95  
 Asp Ala Asp Ile Leu Leu Pro Leu Ser Gln Ile Glu Ala Ser Val Leu  
 100 105 110  
 Ala Ile Ile Glu Gln Gly Tyr Leu Leu Ser Ile Pro Tyr Asp Gly Val  
 115 120 125  
 Val Lys Met Leu Ser Glu Ala Gln Ser Glu Ala Phe Glu Tyr Ser Gly  
 130 135 140  
 Gln Gly Cys Asp Tyr Leu Thr Met Phe Ala Ala Thr Tyr Ala Arg Leu  
 145 150 155 160  
 Met Arg Arg Pro Ser Cys Gly Gly Val Phe Val Val Asp Arg Glu Lys  
 165 170 175  
 Tyr Leu His Trp Gly Gly Asp Asn Glu Arg Phe Val Ser Trp Gly Pro  
 180 185 190  
 Glu Asp Ala Glu Arg Ile Arg Arg Ile Glu Ile Leu Gly Tyr Pro Val  
 195 200 205  
 His Trp Val Lys Glu Gly Pro Leu Tyr His Leu Trp His Pro Arg Gly  
 210 215 220  
 Glu Asn Ser Gly Tyr Ala Thr Glu Glu Leu Ala Phe Gln Asn Arg Met  
 225 230 235 240  
 Glu Phe Ile Lys Val Cys Ser Met Glu Arg Asn Glu Leu Arg Glu Tyr  
 245 250 255  
 Ile Lys Ser Trp Lys Asn Asn Gly  
 260

<210> 8128  
 <211> 203  
 <212> PRT  
 <213> B.fragilis

<400> 8128  
 Asn Pro Gly Lys Thr Met Gly Lys Val Asp Glu Ala Leu Leu Lys Arg  
 1 5 10 15  
 Ile Ala Asp His Gln Met Leu His Gly Ser Phe Arg Arg Asp Leu Gly  
 20 25 30  
 Val Leu Asn Gly Lys Met Gly Ile Val Leu Phe Phe Phe His Tyr Ala  
 35 40 45  
 Arg Tyr Thr Gly Arg Val Leu Tyr Glu Asp Phe Ala Gly Glu Met Leu  
 50 55 60  
 Glu Glu Val Ile Gln Glu Leu His Ser Asp Leu Pro Ile Arg Phe Ser  
 65 70 75 80  
 Asp Gly Leu Cys Gly Ile Gly Trp Gly Val Glu Tyr Leu Ile Gln Asn  
 85 90 95  
 Ala Phe Ile Ala Gly Asp Ser Asp Glu Ile Leu Glu Asp Leu Asp Gln  
 100 105 110  
 Lys Ile Met Glu Trp Asp Pro Arg Ala Thr Asp Leu Ser Phe Glu  
 115 120 125  
 Ser Gly Leu Glu Gly Val Ala Cys Tyr Ala Ser Ser Arg Leu Lys Ser  
 130 135 140  
 Thr Val Arg Asn Arg Met Pro Phe Asp Gln Val Tyr Leu Ser Glu Leu  
 145 150 155 160

Glu Met Ala Val Gln Gln Lys Gly Leu Arg Met Arg Leu Glu Leu Asp  
 165 170 175  
 Asp Val Phe Val Arg Val Ile Asp Ile Gly Asn Ile Glu Glu Glu Val  
 180 185 190  
 Ser Trp Lys Tyr Gly Leu Lys Met Ile Ala Leu  
 195 200

<210> 8129

<211> 438

<212> PRT

<213> B.fragilis

<400> 8129

Thr Met Gly Asn Leu Val Ala Ile Val Gly Arg Pro Asn Val Gly Lys  
 1 5 10 15  
 Ser Thr Leu Phe Asn Arg Leu Thr Lys Thr Arg Gln Ala Ile Val Asn  
 20 25 30  
 Asp Glu Ala Gly Thr Thr Arg Asp Arg Gln Tyr Gly Lys Ser Glu Trp  
 35 40 45  
 Leu Gly Arg Glu Phe Ser Val Val Asp Thr Gly Gly Trp Val Val Asn  
 50 55 60  
 Ser Asp Asp Ile Phe Glu Glu Ile Arg Lys Gln Val Leu Met Ala  
 65 70 75 80  
 Val Asp Glu Ala Asp Val Ile Leu Phe Val Val Asp Val Thr Asn Gly  
 85 90 95  
 Val Thr Asp Leu Asp Met Gln Val Ala Ala Ile Leu Arg Arg Ala Lys  
 100 105 110  
 Ser Pro Val Ile Met Val Ala Asn Lys Thr Asp Asn His Glu Leu Arg  
 115 120 125  
 Tyr Asn Ala Pro Glu Phe Tyr Arg Leu Gly Leu Gly Asp Pro Tyr Cys  
 130 135 140  
 Ile Ser Ala Ile Ser Gly Ser Gly Thr Gly Asp Leu Met Asp Leu Ile  
 145 150 155 160  
 Val Ser Lys Phe Lys Lys Glu Ser Asp Glu Ile Leu Asp Glu Asp Ile  
 165 170 175  
 Pro Arg Phe Ala Val Val Gly Arg Pro Asn Ala Gly Lys Ser Ser Ile  
 180 185 190  
 Val Asn Ala Phe Ile Gly Glu Glu Arg Asn Ile Val Thr Glu Ile Ala  
 195 200 205  
 Gly Thr Thr Arg Asp Ser Ile Tyr Thr Arg Tyr Asn Lys Phe Gly Phe  
 210 215 220  
 Asp Phe Tyr Leu Val Asp Thr Ala Gly Ile Arg Lys Lys Asn Lys Val  
 225 230 235 240  
 Asn Glu Asp Leu Glu Tyr Tyr Ser Val Val Arg Ser Ile Arg Ala Ile  
 245 250 255  
 Glu Gly Ala Asp Val Cys Ile Leu Met Val Asp Ala Thr Arg Gly Ile  
 260 265 270  
 Glu Ser Gln Asp Leu Asn Ile Phe Ser Leu Ile Gln Lys Asn Ser Lys  
 275 280 285  
 Gly Leu Val Val Val Val Asn Lys Trp Asp Leu Val Glu Asn Lys Thr  
 290 295 300  
 Asp Lys Val Met Lys Thr Phe Glu Glu Ala Ile Arg Ser Arg Phe Ala  
 305 310 315 320  
 Pro Phe Val Asp Phe Pro Ile Val Phe Ala Ser Ala Leu Thr Lys Gln  
 325 330 335  
 Arg Ile Leu Lys Val Leu Glu Glu Ala Arg Lys Val Tyr Glu Asn Arg  
 340 345 350  
 Met Ile Lys Ile Pro Thr Ala Arg Leu Asn Glu Glu Met Leu Pro Leu  
 355 360 365

123456789101112131415161718192021222324252627282930313233343536373839404142434445464748495051525354555657585960616263646566676869707172737475767778798081828384858687888990919293949596979899100101102103104105106107108109110111112113114115116117118119120121122123124125126127128129130131132133134135136137138139140141142143144145146147148149150151152153154155156157158159160161162163164165166167168169170171172173174175176177178179180181182183184185186187188189190191192193194195196197198199200201202203204205206207208209210211212213214215216217218219220221222223224225226227228229230231232233234235236237238239240241242243244245246247248249250251252253254255256257258259260261262263264265266267268269270271272273274275276277278279280281282283284285286287288289290291292293294295296297298299300301302303304305306307308309310311312313314315316317318319320321322323324325326327328329330331332333334335336337338339340341342343344345346347348349350351352353354355356357358359360361362363364365

Ile Glu Ala Tyr Pro Pro Pro Ala Thr Lys Gly Lys Tyr Ile Lys Ile  
 370 375 380  
 Lys Tyr Val Thr Gln Leu Pro Asn Thr Gln Val Pro Ser Phe Val Phe  
 385 390 395 400  
 Phe Ala Asn Leu Pro Gln Tyr Val Lys Glu Pro Tyr Arg Arg Phe Leu  
 405 410 415  
 Glu Asn Lys Met Arg Glu Lys Trp Asp Leu Ser Gly Thr Pro Ile Asn  
 420 425 430  
 Ile Tyr Ile Arg Gln Lys  
 435

<210> 8130  
 <211> 519  
 <212> PRT  
 <213> B.fragilis

<400> 8130

Asn Asp Met Lys Lys Ile Leu Val Gly Thr Leu Thr Cys Leu Phe Gly  
 1 5 10 15  
 Ala Ile Ala Gly His Ala Gln Gln Asp Pro Val Leu Met Arg Ile Asn  
 20 25 30  
 Gly Gln Asp Ile Thr Arg Ser Glu Phe Glu Arg Phe Cys His Arg Asn  
 35 40 45  
 Lys Pro Ser Gly Ile Ala Gly Lys Glu Thr Leu Lys Arg Cys Ala Asp  
 50 55 60  
 Leu Phe Val Asp Met Lys Leu Lys Leu Ser Ala Ala Gln Lys Ala Gly  
 65 70 75 80  
 Leu Asp Thr Val Ser Asp Phe Arg Thr Glu Met Glu Asn Tyr His Arg  
 85 90 95  
 Ala Leu Ser Arg Ser Tyr Leu Thr Asp Ser Ala Thr Asp Glu Ala Tyr  
 100 105 110  
 Ala Lys Lys Leu Tyr Asp Gln Met Lys Thr Arg Ser Ala Ala Gly Glu  
 115 120 125  
 Val Lys Val Met Arg Ile Phe Arg Tyr Leu Pro Gln Thr Ala Leu Pro  
 130 135 140  
 His His Leu Arg Glu Ala Gln Ile Leu Met Asp Ser Leu Tyr His Val  
 145 150 155 160  
 Leu Glu Thr His Pro Asp Ile Asp Phe Arg Thr Leu Val Asn Lys Tyr  
 165 170 175  
 Ser Asp Asp Lys Lys Glu Phe Trp Met Gly Trp Leu Gln Thr Ser Gln  
 180 185 190  
 Glu Phe Glu Glu Val Ala Phe Ser Leu Lys Asp Gly Glu Tyr Ser Lys  
 195 200 205  
 Pro Phe Phe Thr Pro Lys Gly Ile Gln Ile Ile Lys Val Thr Gly Arg  
 210 215 220  
 Arg Glu Ile Pro Pro Phe Glu Gln Ile Arg Gly Glu Leu Ile His Lys  
 225 230 235 240  
 Leu Ser Arg Arg Pro Gly Thr Asp Lys Glu Ile Glu Leu Trp Val Asn  
 245 250 255  
 Lys Leu Lys Ser Thr Cys Gln Tyr Thr Pro Asp Lys Ala Gly Met Glu  
 260 265 270  
 Glu Leu Leu Ala Ser Gly Arg Thr Ser Arg Thr Leu Phe Thr Leu Asp  
 275 280 285  
 Gly Lys Ser Phe Thr Gly Lys Asp Phe Glu Arg Phe Ala Asp Ala His  
 290 295 300  
 Pro Met Gly Ile Lys Arg Gln Leu Asn Ala Phe Val Val Lys Ser Ile  
 305 310 315 320  
 Leu Asp Tyr Glu Asn Asn Arg Leu Glu Gln Lys Tyr Pro Asp Phe Arg  
 325 330 335

Leu Ala Leu Gln Gln Arg Arg Asp Asp Leu Leu Leu Ala Ala Ile Thr  
 340 345 350  
 Arg Arg Glu Ser Arg Gln Val Ser Leu Ser Asp Ser Val Ala Leu Lys  
 355 360 365  
 Ala Phe Phe Lys Glu His Arg Thr Asp Tyr Asn Trp Asp Ser Pro Arg  
 370 375 380  
 Tyr Arg Gly Ala Val Leu His Gly Thr His Lys Lys Thr Leu Lys Ser  
 385 390 395 400  
 Ala Arg Lys Phe Leu Lys Lys Leu Pro Glu Glu Glu Trp Lys Asp Ala  
 405 410 415  
 Ile Arg Leu Thr Phe Asn Thr Pro Ala Ser Pro Ala Thr Ile Arg Ile  
 420 425 430  
 Glu Gln Gly Thr Phe Ala Glu Gly Asp Asn Val Phe Val Asp Lys Leu  
 435 440 445  
 Val Phe Lys Lys Gly Asp Phe Glu Pro Leu Lys Ser Tyr Pro Phe Thr  
 450 455 460  
 Val Val Leu Gly Glu Lys Lys Lys Gly Pro Glu Ser Tyr His Glu Ile  
 465 470 475 480  
 Ile Pro Gln Leu Ile Arg Asp Tyr Gln Asn His Leu Asp Ala Leu Trp  
 485 490 495  
 Thr Glu Arg Leu Arg Ala Ser Ala Lys Val Glu Ile Asn Gln Glu Val  
 500 505 510  
 Leu Lys Thr Val Asn Asn His  
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<210> 8131

<211> 627

<212> PRT

<213> B.fragilis

<400> 8131

Arg Gln Met Lys Ser Ser Tyr Ile Cys Cys Val Leu Leu Phe Val Leu  
 1 5 10 15  
 Phe Leu Val Ser Cys Thr Asp Gly Arg Ser Glu Gly Gln Val Ala Arg  
 20 25 30  
 Leu Leu Arg Gln Ala Glu Met Cys Met Glu Glu Cys Pro Asp Ser Ala  
 35 40 45  
 Leu Val Tyr Leu His Gln Ile Pro Asp Pro Glu Lys Leu Thr Gly Glu  
 50 55 60  
 Asn Gln Ala Asp Tyr Cys Leu Leu Leu Thr Gln Ala Met Asp Lys Asn  
 65 70 75 80  
 Asp Leu Pro Leu Ser Ser Asp Ser Leu Ile Gln Ile Ala Val Gly Tyr  
 85 90 95  
 Tyr Ser Asn Gly Lys Asp Arg Leu Lys Lys Gly Lys Ala Ser Phe Tyr  
 100 105 110  
 Leu Gly Arg Val Lys Ser Ser Arg Gly Met Leu Glu Asp Ala Gln Lys  
 115 120 125  
 Tyr Phe Leu Glu Ala Leu Ser Ile Leu Asp Val Thr Asp Asn Leu Lys  
 130 135 140  
 Tyr Gln Ala Leu Val Arg Asn His Leu Gly Gln Leu Tyr Met Asn Leu  
 145 150 155 160  
 Asp Leu Tyr Gln Asp Ala Leu Ile Met Asn Ser Gln Ser Val Ser Leu  
 165 170 175  
 Phe Gln Gln Leu Thr Asp Thr Ala Asn Leu Val Tyr Ala Glu Arg Asp  
 180 185 190  
 Met Gly Arg Ile Tyr Leu Leu Glu Gly Arg Gln Asp Ser Ala Ser Leu  
 195 200 205  
 Tyr Tyr Gln Gln Ala Ile Asn Asp Ala Leu Ser Tyr Phe Lys Ser Asp  
 210 215 220



Ile Tyr Lys Asp Ile Val Ser Glu Trp Gly Gln Ile Ser Met Tyr Leu  
 225 230 235 240  
 Glu Met Ser Pro Ser Ala Glu Gln Met Leu Leu Ser Asn Leu Glu Ser  
 245 250 255  
 Asp Leu Val Leu Asp Lys Thr Pro Val Cys Leu Ser Leu Gly Ile Tyr  
 260 265 270  
 Tyr Leu Ser Asn Lys Leu Tyr Ser Lys Ala Glu Gly Tyr Leu Leu Lys  
 275 280 285  
 Ala Ala Ala Ser Ser Arg Pro Tyr Thr Arg Val Ser Ala Tyr Lys Tyr  
 290 295 300  
 Leu Gly His Leu Glu Thr Arg Asn Leu Asp Leu Ile Tyr Trp Asp Gln  
 305 310 315 320  
 Tyr Glu Gln Ala Leu Asp Ser Leu Glu Arg Gln Asn Leu Ala Tyr Ala  
 325 330 335  
 Val Lys Glu Ile Gln Glu Lys Tyr Asn Asn Ala Ala Leu Gln Ala His  
 340 345 350  
 Thr Phe Lys Leu Glu Asn Glu Arg Leu His Ser Thr Ile Ser Tyr Leu  
 355 360 365  
 Ser Val Ile Leu Leu Leu Leu Ser Ile Thr Ser Val Ile Tyr Val Phe  
 370 375 380  
 Tyr Met Lys Glu Arg Arg Arg Arg Gln Ile Glu Lys Glu Glu Phe Asn  
 385 390 395 400  
 Arg Asn Met Lys Ala His Glu Gln Glu Arg Ala Arg Leu Leu Ala Glu  
 405 410 415  
 Leu Ser Asp Ser Lys Leu His Val Glu Lys Leu Glu Gln Leu Lys Ser  
 420 425 430  
 Glu Gln Lys Gln Ser Ser Leu Glu Val Gln Glu Lys Thr Asn Ala Leu  
 435 440 445  
 Leu Glu Gln Glu Lys Glu His Ser Cys Lys Ile Ser Gln Gln Leu Glu  
 450 455 460  
 Glu Leu Lys Lys Lys Trp Lys Asn Gln Leu Ser Ile Asn Ile Asp Leu  
 465 470 475 480  
 Arg Ala Arg Asn Lys Asp Leu Ser Tyr Lys Ile Lys Ser Leu Lys Asp  
 485 490 495  
 Ser Asp Met Glu Asn Thr Pro Gly Leu Tyr Ala Ser Ile Asn Leu Leu  
 500 505 510  
 Val Arg Ile Leu Thr Cys Asp Leu Ser Glu Ile Lys Thr Leu Lys Val  
 515 520 525  
 Asp Asp Trp Glu Gly Leu Phe Gln Cys Ile Asp Leu Leu Tyr Gly Asn  
 530 535 540  
 Ser Leu Arg Lys Phe Ile Asp Gln Tyr Gln Lys Gln His Asp Glu Glu  
 545 550 555 560  
 Leu Asp Arg Arg Val Val Ala Ile Cys Tyr Phe Glu Tyr Ile Lys Val  
 565 570 575  
 Lys His Ala Arg Gln Ala Ala Ile Leu Arg Val Ser Ala Gln Ala Leu  
 580 585 590  
 Ser Lys Arg Lys Gln Arg Leu Lys Ile Glu Leu Gly Val Pro Asp Met  
 595 600 605  
 Ala Ser Val Gly Arg Val Val Lys Pro Val Cys Pro Ser Asn Lys Lys  
 610 615 620  
 Glu Leu Met  
 625

&lt;210&gt; 8132

&lt;211&gt; 571

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8132

Ser Tyr Phe Asp Met Phe Arg Phe Asn Lys Glu Asn Lys Phe Gln Gly  
 1 5 10 15  
 Arg His Arg Phe Leu Leu Ala Gly Thr Leu Cys Leu Leu Ala Val Cys  
 20 25 30  
 Phe Leu Met Ala Gln Asp Lys Lys Pro Gln His Asp Lys Lys Ala Gln  
 35 40 45  
 Pro Glu Gln Lys Val Glu Pro Glu Lys Ala Gln Gly Lys Lys Lys Thr  
 50 55 60  
 Arg Val Asp Leu Leu His Ala Asp Gln Gly Gln Ala Asp Lys Leu Ala  
 65 70 75 80  
 Arg Pro Asp Val Gln Val Leu Ile Gly Ser Val Lys Leu Arg His Asp  
 85 90 95  
 Ser Met Tyr Met Tyr Cys Asp Ser Ala Leu Ile Tyr Glu Lys Thr Asn  
 100 105 110  
 Ser Phe Glu Ala Phe Ser Asn Val Arg Met Glu Gln Gly Asp Thr Leu  
 115 120 125  
 Phe Ile Tyr Gly Asp Tyr Leu Phe Tyr Asp Gly Met Thr Gln Ile Ala  
 130 135 140  
 Gln Leu Arg Glu Asn Val Lys Met Ile Asn Arg Asn Thr Thr Leu Leu  
 145 150 155 160  
 Thr Asp Ser Leu Asn Tyr Asp Arg Leu Tyr Asn Leu Gly Tyr Tyr Phe  
 165 170 175  
 Asp Gly Gly Thr Leu Met Asp Glu Glu Asn Val Leu Thr Ser Asp Trp  
 180 185 190  
 Gly Glu Tyr Ser Pro Ala Thr Lys Leu Ser Val Phe Asn His Asp Val  
 195 200 205  
 Lys Leu Val Asn Pro Arg Phe Val Leu Thr Ser Asp Thr Leu Lys Tyr  
 210 215 220  
 Ser Thr Asp Thr Lys Ile Ala Thr Ile Leu Gly Pro Ser Asp Ile Val  
 225 230 235 240  
 Ser Glu Gln Asn His Ile Tyr Ser Glu Arg Gly Ile Tyr Asn Thr Val  
 245 250 255  
 Ser Gly Gln Ala Glu Leu Leu Asp Arg Ser Val Leu Thr Asn Asp Gly  
 260 265 270  
 Lys Arg Leu Thr Gly Asp Ser Leu Phe Tyr Asp Arg Lys Ala Gly Tyr  
 275 280 285  
 Gly Glu Ala Phe Asp Asn Val Gln Met Asn Asp Thr Val Asn Lys Asn  
 290 295 300  
 Met Leu Thr Gly Asp Tyr Cys Tyr Tyr Asp Glu Leu Lys Gln Asn Ala  
 305 310 315 320  
 Leu Ala Thr Lys Arg Ala Val Ala Val Asp Tyr Ser Arg Gly Asp Ser  
 325 330 335  
 Leu Phe Met His Ala Asp Thr Leu Leu Met Asn Ser Tyr Asn Leu Asp  
 340 345 350  
 Thr Asp Ser Leu Phe Arg Glu Met Arg Ala Phe His Lys Val Arg Met  
 355 360 365  
 Tyr Ser Ile Asp Leu Gln Gly Val Cys Asp Ser Leu Val Phe Asn Thr  
 370 375 380  
 Lys Asp Ser Cys Leu Thr Met Tyr Arg Asp Pro Ile Leu Trp Asn Glu  
 385 390 395 400  
 Gly Gln Gln Leu Leu Gly Glu Glu Ile Lys Val Tyr Met Asn Asp Ser  
 405 410 415  
 Thr Ile Asp Trp Ala His Ile Ile Asn Gln Ala Leu Thr Val Glu Gln  
 420 425 430  
 Lys Asp Ser Ile His Phe Asn Gln Ile Ser Gly Lys Glu Ile Lys Ala  
 435 440 445  
 Tyr Phe Ala Glu Gly Glu Ala Arg Lys Val Asp Val Ile Gly Asn Val  
 450 455 460  
 Leu Val Val Tyr Tyr Pro Gln Glu Gln Asp Ser Thr Met Ile Gly Met

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 4399  
 4400

465                      470                      475                      480  
 Asn Thr Ser Glu Thr Ser Leu Leu Asn Met Tyr Leu Lys Asp Arg Lys  
                                  485                      490                      495  
 Met Glu Arg Met Val Met Ser Pro Lys Ser Asn Gly Thr Leu Tyr Pro  
                                  500                      505                      510  
 Met Asn Gln Ile Pro Pro Asp Lys Met Lys Leu Pro Thr Phe Ser Trp  
                                  515                      520                      525  
 Phe Asp Tyr Val Arg Pro Leu Ser Lys Glu Asp Ile Phe Asn Trp Arg  
                                  530                      535                      540  
 Gly Lys Lys Ala Gly Glu Ala Leu Arg Lys Thr Glu Arg Lys Ala Ile  
 545                      550                      555                      560  
 Ser Gly Pro Lys Arg Glu Ile Ile Asn Met Lys  
                                  565                      570

<210> 8133  
 <211> 107  
 <212> PRT  
 <213> B.fragilis

<400> 8133  
 Cys Phe Phe Asp Met Lys Ser Gln Arg Leu Gly Leu Gln Pro Ile Lys  
 1                      5                      10                      15  
 Asn Tyr Glu Arg Val Val Asn Pro Arg Lys Lys Arg Phe His Met Ser  
                                  20                      25                      30  
 Ser Arg Met Asn Ser His Gly Lys Ile Ile Thr Lys Ile Ala Asp  
                                  35                      40                      45  
 Tyr Glu Ser Asn Tyr Ile Lys Lys Ala Gly Leu Leu Glu Gly Asp Glu  
                                  50                      55                      60  
 Ile Ile Ala Ile Asn Glu Ile Pro Ile Lys Met Ile Thr Ile Glu Glu  
 65                      70                      75                      80  
 Asn Thr Lys Leu Asn Arg Arg Gly Gln Gly Lys Ser Tyr Lys Ile Pro  
                                  85                      90                      95  
 Val Val Ile Asp Arg Asn Glu Val Gln Gly Asp  
                                  100                      105

<210> 8134  
 <211> 69  
 <212> PRT  
 <213> B.fragilis

<400> 8134  
 Lys His Ala Glu Ile Tyr Gly Ser Phe Ile Lys His His Ser Phe Arg  
 1                      5                      10                      15  
 Asn Met Phe Ile Lys Phe Ile Phe Val Leu Thr Tyr Gln Lys Glu Glu  
                                  20                      25                      30  
 His Tyr Cys His Phe Pro Thr Ile His Tyr Lys Ala Phe Gln Leu Tyr  
                                  35                      40                      45  
 Pro Ser Ser Gln Tyr Pro Phe Arg Lys Val Ser Ile Ser Ala Ile Ala  
                                  50                      55                      60  
 Ala Leu Ser Ile Gln  
 65

<210> 8135  
 <211> 339  
 <212> PRT  
 <213> B.fragilis

<400> 8135  
 Ile Lys Thr Glu Leu Met Glu Lys Ile Asn Ala Val Ile Thr Gly Val

1 5 10 15  
 Gly Gly Tyr Val Pro Asp Tyr Val Leu Thr Asn Asp Glu Ile Ser Lys  
 20 25 30  
 Met Val Asp Thr Asn Asp Glu Trp Ile Met Thr Arg Ile Gly Val Lys  
 35 40 45  
 Glu Arg Arg Ile Leu Asn Glu Glu Gly Leu Gly Thr Ser Tyr Met Ala  
 50 55 60  
 Arg Lys Ala Ala Lys Gln Leu Met Lys Lys Thr Gly Ser Asn Pro Asp  
 65 70 75 80  
 Asp Ile Asp Leu Val Ile Val Ala Thr Thr Pro Asp Tyr His Phe  
 85 90 95  
 Pro Ser Thr Ala Ser Ile Leu Cys Asp Lys Leu Gly Leu Lys Asn Ala  
 100 105 110  
 Phe Ala Phe Asp Leu Gln Ala Ala Cys Ser Gly Phe Leu Phe Leu Met  
 115 120 125  
 Glu Thr Ala Ala Asn Phe Ile Arg Ser Gly Arg Tyr Lys Lys Ile Ile  
 130 135 140  
 Ile Val Gly Ala Asp Lys Met Ser Ser Met Val Asp Tyr Thr Glu Arg  
 145 150 155 160  
 Ala Thr Cys Pro Ile Phe Gly Asp Gly Ala Ala Ala Phe Met Val Glu  
 165 170 175  
 Pro Thr Thr Glu Asp Leu Gly Ile Met Asp Ala Ile Leu Arg Thr Asp  
 180 185 190  
 Gly Lys Gly Leu Pro Phe Leu His Met Lys Ala Gly Gly Ser Val Cys  
 195 200 205  
 Pro Pro Ser Tyr Phe Thr Val Asp Asn Lys Met His Tyr Ile His Gln  
 210 215 220  
 Glu Gly Arg Thr Val Phe Lys Tyr Ala Val Ser Asn Met Ser Asp Val  
 225 230 235 240  
 Ser Ala Ala Ile Ala Glu Lys Asn Gly Leu Thr Lys Asp Asn Ile Asp  
 245 250 255  
 Trp Ile Val Pro His Gln Ala Asn Met Arg Ile Ile Glu Ala Val Ala  
 260 265 270  
 His Arg Met Glu Val Pro Met Glu Lys Val Leu Val Asp Ile Gln His  
 275 280 285  
 Tyr Gly Asn Thr Ser Ala Gly Thr Leu Pro Leu Cys Ile Trp Asp Phe  
 290 295 300  
 Glu Glu Lys Leu Lys Lys Gly Asp Asn Ile Ile Phe Thr Ala Phe Gly  
 305 310 315 320  
 Ala Gly Phe Thr Trp Gly Ala Val Tyr Val Lys Trp Gly Tyr Asp Gly  
 325 330 335  
 Lys Lys Glu

&lt;210&gt; 8136

&lt;211&gt; 130

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8136

Ser Ile Ser Phe Ser Ile Ser Ile Thr Arg Phe Leu Leu Pro Ala Gln  
 1 5 10 15  
 Arg Arg Phe Cys Lys Leu Ser Val Ser Leu Ile Leu Leu Leu Leu Asn  
 20 25 30  
 His Leu Pro Glu Ser Phe Ile Ser Phe Ile Ser Phe Phe Ile Ile Phe  
 35 40 45  
 Thr Met Asn Ile Tyr Val Gly Asn Leu Ser Tyr Arg Val Lys Glu Ala  
 50 55 60  
 Asp Leu Gln Gln Val Met Glu Asp Tyr Gly Thr Val Thr Ser Cys Lys

65					70					75				80
Val	Ile	Met	Asp	Arg	Glu	Thr	Gly	Lys	Ser	Lys	Gly	Phe	Gly	Val
				85					90				95	
Glu	Ile	Ala	Asp	Asp	Ala	Ala	Gly	Ala	Lys	Ala	Ile	Ala	Glu	Leu
			100					105					110	Asn
Gly	Ala	Glu	Tyr	Glu	Gly	Arg	Thr	Met	Val	Val	Lys	Glu	Ala	Arg
		115					120					125		Pro
Arg	Glu													
	130													

<210> 8137  
 <211> 62  
 <212> PRT  
 <213> B.fragilis

<400> 8137															
Asn	Arg	Leu	Leu	Arg	Asn	Lys	Asp	Phe	Ser	Leu	Ser	Val	Ile	Gly	Ile
1				5				10						15	
Asp	Lys	Ala	Arg	Asp	Tyr	Pro	Val	Lys	Cys	Ile	Glu	Ile	Arg	Glu	Val
			20					25					30		
Ala	Asp	Val	Glu	Tyr	Ile	Pro	Leu	Glu	Ala	Val	Ser	Ser	Ser	Leu	Leu
		35					40					45			
Ile	Asn	Asp	Ile	Trp	Gly	Tyr	Tyr	Val	Phe	Tyr	Leu	Ser	Lys		
	50					55					60				

<210> 8138  
 <211> 257  
 <212> PRT  
 <213> B.fragilis

<400> 8138															
Gln	Arg	Ile	Trp	Lys	Lys	Ala	Ser	Lys	Met	Val	Leu	Arg	Thr	Glu	Asp
1				5				10						15	
Leu	Val	Lys	Lys	Tyr	Gly	Lys	Arg	Thr	Val	Val	Ser	His	Val	Ser	Ile
			20					25					30		
Asn	Val	Lys	Gln	Gly	Glu	Ile	Val	Gly	Leu	Leu	Gly	Pro	Asn	Gly	Ala
		35					40					45			
Gly	Lys	Thr	Thr	Ser	Phe	Tyr	Met	Thr	Val	Gly	Leu	Ile	Thr	Pro	Asn
	50					55					60				
Glu	Gly	Arg	Ile	Phe	Leu	Asp	Asp	Leu	Glu	Ile	Thr	Lys	Tyr	Pro	Val
65					70				75					80	
Tyr	Lys	Arg	Ala	Gln	Thr	Gly	Ile	Gly	Tyr	Leu	Ala	Gln	Glu	Ala	Ser
				85				90						95	
Val	Phe	Arg	Gln	Met	Thr	Val	Glu	Asp	Asn	Ile	Ala	Ser	Val	Leu	Glu
			100					105					110		
Met	Thr	Asn	Lys	Pro	Leu	Asp	Tyr	Gln	Lys	Asp	Lys	Leu	Glu	Ser	Leu
		115					120					125			
Ile	Ala	Glu	Phe	Arg	Leu	Gln	Lys	Val	Arg	Lys	Asn	Lys	Gly	Thr	Gln
	130					135					140				
Leu	Ser	Gly	Gly	Glu	Arg	Arg	Arg	Thr	Glu	Ile	Ala	Arg	Cys	Leu	Ala
145					150				155					160	
Ile	Asp	Pro	Lys	Phe	Ile	Met	Leu	Asp	Glu	Pro	Phe	Ala	Gly	Val	Asp
			165					170						175	
Pro	Ile	Ala	Val	Glu	Asp	Ile	Gln	Gln	Ile	Val	Trp	Lys	Leu	Lys	Asp
		180						185					190		
Lys	Asn	Ile	Gly	Ile	Leu	Ile	Thr	Asp	His	Asn	Val	Gln	Glu	Thr	Leu
	195						200					205			
Ser	Ile	Thr	Asp	Arg	Ala	Tyr	Leu	Leu	Phe	Glu	Gly	Lys	Ile	Leu	Phe
	210					215					220				

118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999 1000

Gln Gly Thr Pro Glu Glu Leu Ala Glu Asn Lys Ile Val Arg Glu Lys  
 225 230 235 240  
 Tyr Leu Ser Asn Ser Phe Val Leu Arg Arg Lys Asp Phe Gln Leu Lys  
 245 250 255  
 Asp

<210> 8139  
 <211> 224  
 <212> PRT  
 <213> B.fragilis

<400> 8139  
 Leu Met Asn Arg Thr Phe Cys Phe Val Pro Val Arg Lys Gly Ser Arg  
 1 5 10 15  
 Gly Ile Pro Gly Lys Asn Leu Arg Leu Leu Gly Asp Lys Pro Leu Val  
 20 25 30  
 Cys Trp Ile Ile Asp Thr Ile Leu Ala Ser Gly Ile Ala Asp Glu Val  
 35 40 45  
 Cys Val Ala Thr Asn Cys Asp Glu Met Glu Ser Leu Ile Arg Gly Arg  
 50 55 60  
 Tyr Lys Gly Val Val Gln Ile Phe Arg Arg Ser Glu Trp Ser Ala Arg  
 65 70 75 80  
 Asp Glu Ala Ser Ser Leu Glu Val Val Gln Glu Tyr Leu Asn Tyr Arg  
 85 90 95  
 Lys Pro Asp Arg Asn Asp Asp Phe Ile Leu Leu Gln Ala Thr Ser Pro  
 100 105 110  
 Phe Thr Thr Ala Gln Glu Leu Arg Gly Leu Val Glu Glu Met Lys Arg  
 115 120 125  
 Gly Glu Ala Asp Ser Tyr Val Ala Cys Cys Arg Leu Lys Lys Phe Arg  
 130 135 140  
 Trp Ser Asp Glu Gly Arg Pro Leu Asp Tyr Ser Phe Glu Thr Lys Pro  
 145 150 155 160  
 Arg Arg Gln Glu Tyr Lys Gly Phe Leu Ile Glu Ser Gly Ala Phe Tyr  
 165 170 175  
 Ala Ser Thr Val Gly Arg Ile Leu Asp Ser Gly Gln Leu Leu Ser Gly  
 180 185 190  
 Val Val Lys Val Val Glu Val Gly Pro Ala Gly Met Ile Asp Val Asp  
 195 200 205  
 Glu Glu Ala Asp Trp Arg Leu Ala Glu His Tyr Ile Glu Thr Gly Leu  
 210 215 220

<210> 8140  
 <211> 455  
 <212> PRT  
 <213> B.fragilis

<400> 8140  
 Ile Ile Val Arg Met Asn Val Ser Leu Gln Asn Ile Asp Lys Val Ser  
 1 5 10 15  
 Ala Leu Leu Thr Val Lys Leu Glu Lys Ala Asp Tyr Gln Pro Gln Val  
 20 25 30  
 Asp Lys Ser Leu Lys Asn Ile Arg Gln Lys Ala Gln Val Pro Gly Phe  
 35 40 45  
 Arg Pro Gly Met Val Pro Met Ser Leu Val Lys Lys Met Tyr Gly Lys  
 50 55 60  
 Ser Val Ile Ala Asp Glu Val Asn Lys Leu Leu Ser Glu Lys Val Tyr  
 65 70 75 80  
 Ala Tyr Ile Lys Glu Asn Ile Ile Asn Ile Leu Gly Asp Pro Met Pro

				85					90					95	
Ile	Glu	Glu	Lys	Gln	Pro	Asp	Ile	Asp	Phe	Asp	Thr	Lys	Glu	Glu	Phe
			100					105					110		
Glu	Phe	Val	Phe	Asp	Ile	Ala	Trp	Ala	Pro	Glu	Phe	Lys	Ala	Glu	Val
		115					120					125			
Ser	Asp	Gln	Asp	Lys	Val	Asp	Tyr	Tyr	Thr	Ile	Glu	Val	Pro	Asp	Glu
	130					135					140				
Met	Val	Glu	Asn	Gln	Ile	Lys	Ala	Tyr	Thr	Gln	Arg	Asn	Gly	Lys	Tyr
	145			150						155				160	
Glu	Lys	Val	Asp	Ala	Tyr	Glu	Glu	Asn	Asp	Met	Leu	Lys	Gly	Leu	Leu
			165					170					175		
Ala	Glu	Leu	Asp	Glu	Glu	Gly	Asn	Thr	Lys	Glu	Gly	Gly	Ile	Gln	Val
			180				185						190		
Glu	Gly	Ala	Val	Met	Met	Pro	Ser	Tyr	Met	Lys	Asn	Asp	Glu	Gln	Lys
		195					200					205			
Ala	Ile	Phe	Ala	Asn	Ala	Lys	Val	Asn	Asp	Val	Leu	Val	Phe	Asn	Pro
	210					215					220				
Asn	Thr	Ala	Tyr	Glu	Gly	Asn	Ala	Val	Glu	Met	Ala	Ser	Leu	Leu	Lys
	225				230				235					240	
Ile	Asp	Lys	Glu	Ala	Ala	Ala	Glu	Val	Lys	Gly	Asn	Phe	Ser	Phe	Gln
			245					250					255		
Val	Glu	Glu	Val	Thr	Arg	Phe	Val	Asn	Gly	Glu	Leu	Asn	Gln	Glu	Ile
			260					265					270		
Phe	Asp	Gln	Val	Phe	Gly	Lys	Asp	Val	Val	Lys	Thr	Glu	Glu	Glu	Phe
	275						280					285			
Arg	Ala	Lys	Val	Lys	Glu	Ser	Ile	Ala	Ala	Gln	Phe	Val	Ala	Asp	Ser
	290					295					300				
Asp	Tyr	Lys	Phe	Leu	Ile	Asp	Val	Arg	Lys	Val	Leu	Thr	Asp	Lys	Val
	305				310				315					320	
Gly	Lys	Leu	Glu	Phe	Pro	Asp	Ala	Leu	Leu	Lys	Arg	Val	Met	Leu	Val
			325					330					335		
Asn	Asn	Lys	Asp	Lys	Gly	Glu	Glu	Phe	Val	Asn	Glu	Asn	Tyr	Asp	Lys
			340					345					350		
Ser	Ile	Glu	Glu	Leu	Thr	Trp	His	Leu	Ile	Lys	Glu	Gln	Leu	Val	Lys
	355					360						365			
Glu	Asn	Asp	Ile	Lys	Val	Glu	Gln	Asp	Asp	Val	Ile	Asn	Met	Ala	Lys
	370					375				380					
Glu	Ala	Thr	Lys	Ala	Gln	Phe	Ala	Gln	Tyr	Gly	Met	Leu	Thr	Ile	Pro
	385				390				395					400	
Asp	Asp	Ile	Leu	Glu	Asn	Tyr	Ala	Lys	Glu	Met	Leu	Lys	Lys	Lys	Glu
			405					410					415		
Ser	Ile	Asp	Gly	Leu	Val	Asn	Arg	Val	Val	Glu	Thr	Lys	Leu	Ala	Ala
		420					425						430		
Ala	Leu	Lys	Gly	Lys	Val	Thr	Leu	Glu	Asn	Lys	Thr	Val	Ser	Met	Glu
		435				440						445			
Glu	Phe	Asn	Lys	Met	Phe	Glu									
	450					455									

&lt;210&gt; 8141

&lt;211&gt; 88

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8141

Ser	Leu	Pro	Arg	Ala	His	Ile	Asp	Gly	Gly	Val	Trp	His	Leu	Asp	Val
1				5				10					15		
Gly	Ser	Ser	His	Pro	Gly	Ala	Gly	Glu	Gly	Pro	Lys	Gly	Trp	Ala	Val
			20				25					30			
Arg	Pro	Leu	Lys	Trp	His	Ala	Ser	Trp	Val	Gln	Asn	Val	Val	Arg	Gln

35 40 45  
 Phe Gly Leu Tyr Leu Ser Trp Ala Tyr Glu Ile Cys Val Ala Leu Thr  
 50 55 60  
 Leu Val Arg Glu Asp Arg Val Gly Leu Thr Ser Gly Leu Pro Val Val  
 65 70 75 80  
 Pro Pro Gly Ala Leu Pro Gly Ile  
 85

<210> 8142  
 <211> 80  
 <212> PRT  
 <213> B.fragilis

<400> 8142  
 Ser Leu Gln Arg Tyr Lys Lys Ser Pro Asn Val Met Tyr Tyr Leu Thr  
 1 5 10 15  
 Asn Phe His Leu Asn Leu Lys Leu Val Asp Ile Ile Arg Ala Thr Lys  
 20 25 30  
 Ile Arg Ile Ile Ile Leu Ile Thr Tyr Lys Leu Ser Val Asn Ile Arg  
 35 40 45  
 Ile Leu Asn Ser Ile Leu Phe Ile Thr Arg Phe Pro Tyr Ser Gln Gly  
 50 55 60  
 Gln Ser Arg Asn Arg Ala Ala Arg Arg Ser Leu Ser Phe Pro Pro Val  
 65 70 75 80

<210> 8143  
 <211> 96  
 <212> PRT  
 <213> B.fragilis

<400> 8143  
 Cys Val Met Arg Ile Ile Ser Phe Ala Ala Ile Arg Asn Tyr Ala Lys  
 1 5 10 15  
 Lys His Ala Asp Ala Asp Val Pro Leu Arg Asp Trp Tyr Lys Lys Thr  
 20 25 30  
 Glu Lys Ala Asp Trp Ser Cys Leu Ala Asp Ile Lys Gln Thr Phe Asn  
 35 40 45  
 Ser Val Asp Tyr Val Gly Asn Asp Arg Phe Val Phe Asn Ile Lys Gly  
 50 55 60  
 Asn Asp Tyr Arg Leu Val Ala Met Ile Leu Phe Ala Ala Lys Lys Val  
 65 70 75 80  
 Phe Ile Arg Trp Ile Gly Thr His Lys Glu Tyr Asp Asn Lys Asp Cys  
 85 90 95

<210> 8144  
 <211> 260  
 <212> PRT  
 <213> B.fragilis

<400> 8144  
 Thr Phe Asn Gly Met Ile Glu Val Lys Gly Leu Tyr Lys Ser Phe Glu  
 1 5 10 15  
 Gly Lys Thr Val Leu His Asn Ile Asp Ala Thr Phe Glu Asn Gly Lys  
 20 25 30  
 Thr Ser Leu Ile Ile Gly Gln Ser Gly Ser Gly Lys Thr Val Leu Met  
 35 40 45  
 Lys Cys Ile Val Gly Leu Leu Thr Pro Glu Lys Gly Glu Val Leu Tyr  
 50 55 60  
 Asp Gly Arg Asn Phe Leu Ala Met Gly Lys Lys Glu Lys Lys His Leu



65					70					75				80
Arg	Arg	Glu	Met	Gly	Met	Ile	Phe	Gln	Ser	Ala	Ala	Leu	Phe	Asp
				85					90					95
Met	Ser	Val	Leu	Asp	Asn	Val	Met	Phe	Pro	Leu	Asn	Met	Phe	Gly
			100					105					110	
Asp	Thr	Leu	Arg	Glu	Gln	Thr	Lys	Arg	Ala	Met	Phe	Cys	Leu	Asp
		115					120					125		
Val	Asn	Leu	Thr	Glu	Ala	Lys	Asp	Lys	Phe	Pro	Gly	Glu	Ile	Ser
	130					135					140			
Gly	Met	Gln	Lys	Arg	Val	Ala	Ile	Ala	Arg	Ala	Ile	Ala	Leu	Asn
145					150					155				160
Gln	Tyr	Leu	Phe	Cys	Asp	Glu	Pro	Asn	Ser	Gly	Leu	Asp	Pro	Lys
			165						170					175
Ser	Leu	Val	Ile	Asp	Asp	Leu	Ile	His	Asp	Ile	Thr	Arg	Glu	Tyr
		180						185					190	
Met	Thr	Thr	Ile	Ile	Asn	Thr	His	Asp	Met	Asn	Ser	Val	Met	Gly
		195					200					205		
Gly	Glu	Lys	Ile	Ile	Tyr	Ile	Tyr	Gln	Gly	Thr	Lys	Glu	Trp	Glu
	210					215					220			
Thr	Lys	Asp	Asp	Ile	Phe	Thr	Ser	Thr	Asn	Glu	Gln	Leu	Asn	Asn
225					230					235				240
Ile	Phe	Ala	Ser	Asp	Leu	Leu	Arg	Lys	Val	Lys	Asp	Val	Glu	Ile
			245						250					255
Asn	Leu	Glu	Gly											
			260											

&lt;210&gt; 8145

&lt;211&gt; 84

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8145

Val	Ser	Thr	Gly	Arg	Arg	Pro	Ile	Ile	Ser	Gly	Ile	Ser	Pro	Asn	Asp
1				5					10					15	
Phe	Lys	Ser	Cys	Gly	Ala	Ile	Tyr	Cys	Ile	Met	Leu	Phe	Leu	Ser	Ile
			20					25					30		
Val	Ala	Val	Leu	Arg	Glu	Ala	Leu	Tyr	Pro	Thr	Thr	Trp	Val	Leu	Arg
		35					40					45			
Arg	Trp	Ala	Ile	Phe	Phe	Ser	Met	Pro	Ser	Asn	Ala	Pro	Pro	Gln	Met
	50					55					60				
Lys	Arg	Met	Phe	Phe	Val	Phe	Thr	Gly	Ile	Ile	Phe	Trp	Ser	Gly	Cys
65					70				75						80
Leu	Arg	Pro	Pro												

&lt;210&gt; 8146

&lt;211&gt; 410

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8146

Ser	Thr	Leu	Ile	Phe	Asp	Val	Tyr	Asn	Leu	Ile	Asn	Met	Arg	Met	Asn
1				5					10					15	
Lys	Tyr	Trp	Gly	Thr	Trp	Ile	Val	Phe	Ile	Gly	Val	Phe	Phe	His	Ser
			20					25					30		
Cys	Lys	Gln	Glu	Val	Lys	Gln	Asn	Ile	Ser	Phe	Tyr	Ser	Val	Asp	
		35				40					45				
Leu	Leu	Glu	Met	Glu	Lys	Met	Lys	Gly	Glu	Glu	Ile	Leu	Leu	Ser	Asp
	50					55					60				

Leu Ile Glu Ser Leu Glu Ile Ile Lys Leu Asp Asn Arg Glu Glu Ala  
 65 70 75 80  
 Leu Ile Ala Thr Tyr Pro Phe Gly Ile Asp Val Ser Ser Asn Tyr Ile  
 85 90 95  
 Leu Ile Glu Pro Asp Gly Val Ser Ala Leu Lys Leu Phe Thr Arg Lys  
 100 105 110  
 Gly Arg Tyr Val Ala Asp Ile Gly Gly Val Gly Gln Gly Pro Gly Glu  
 115 120 125  
 Tyr Lys Tyr Ala Val Asn Arg Phe Leu Asp Glu Lys Gln Gly Arg Val  
 130 135 140  
 Ala Ile Ala Glu Asn Lys Lys Ile Leu Phe Phe Asp Leu Lys Gly Gln  
 145 150 155 160  
 Phe Leu Ser Glu Glu Ser Ile Ser Leu Pro Glu Thr Ile Thr Lys Ser  
 165 170 175  
 Ser Ile Trp Ile Asp Leu Glu Asn Glu Lys Ala Val Val Val Val Leu  
 180 185 190  
 Pro Phe Ala Asp Ile Gly Asn Pro Lys Ala Pro Ile Ser Lys Asn Leu  
 195 200 205  
 Cys Trp Val Gln Asp Phe Lys Gly Asn Ile Leu Gln Lys Ile Ser Ala  
 210 215 220  
 Ile Asn Tyr Ala Ile Val Pro Asp Tyr Ser Asn Glu Val Leu Ala Pro  
 225 230 235 240  
 Arg Asn Val Asp Ala Tyr Ser Phe Ser Leu Cys Gln Val Val Gly Arg  
 245 250 255  
 Thr Arg Pro Asp Thr Leu Tyr His Tyr Asp Ile Ala Asn Asn Leu Leu  
 260 265 270  
 Lys Pro Tyr Phe Thr Leu Asp Asn Val Met Gln Glu Asp Lys Tyr Ile  
 275 280 285  
 Val Thr Ser Leu Tyr Glu Thr Pro Glu Tyr Tyr Trp Ser Arg Val Thr  
 290 295 300  
 Ile Gly Pro Ala Lys Val Leu Ser Asp Gly Ala Pro Val Arg Met Thr  
 305 310 315 320  
 Val Phe Asn Val Arg Val Ser Lys Lys Asp Gly Ser Val Lys Arg Ile  
 325 330 335  
 Asp Arg Phe Thr Asn Asp Phe Leu Gly Leu Ser Tyr Pro Phe Leu Thr  
 340 345 350  
 Met Arg Asn Gly Tyr Val Cys Ile Thr Tyr Glu Pro Leu Glu Leu Met  
 355 360 365  
 Glu Ala Leu Asp Lys Val Leu Ala Gln Thr Asp Leu Lys Pro Asp Val  
 370 375 380  
 Arg Lys Arg Ala Thr Asp Leu Arg Asn Ser Leu His Glu Asn Asp Asn  
 385 390 395 400  
 Asp Ile Leu Ile Ile Gly Lys Leu Lys Gln  
 405 410

&lt;210&gt; 8147

&lt;211&gt; 403

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8147

Arg Glu Tyr Met Lys Lys Tyr Leu Tyr Phe Ile Phe Phe Val Thr Leu  
 1 5 10 15  
 Trp Ser Cys Ser Ala Asp Lys Val Asn Val Lys Ser Glu Asp Asn Ser  
 20 25 30  
 Phe Tyr Ser Val Asp Leu Arg Ile Ile Glu Lys Thr Lys Gly Thr Val  
 35 40 45  
 Met Ser Leu Gly Asp Leu Met Glu Ser Tyr Glu Ile Ile Arg Leu Asp  
 50 55 60

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Asn Arg Asp Glu Ala Leu Ile Lys Thr Tyr Pro Tyr Gly Val Tyr Val
65          70          75          80
Thr Asp Asn Tyr Ile Leu Leu Arg Pro Ala Asp Val Val Ser Pro Val
          85          90          95
Lys Leu Phe Thr Arg Lys Gly Arg Tyr Val Ala Asp Ile Gly Gly Val
          100         105         110
Gly Gln Gly Pro Gly Glu Tyr Leu Tyr Leu Phe Ser Trp Leu Val Asp
          115         120         125
Glu Lys Glu Asn Arg Ile Tyr Leu Gly Pro Gly Arg Ala Asp Lys Val
          130         135         140
Leu Val Tyr Asp Leu Lys Gly Asn Tyr Leu Pro Asp Glu Val Ile Arg
          145         150         155         160
Phe Gly Glu Ile Val His Lys Ser Gln Ile Trp Val Asp Tyr Asp Lys
          165         170         175
Lys Asn Val Val Val Val Thr Leu Pro Phe Ser Ala Asn Val Asn Ser
          180         185         190
Asn Phe Ala Ile Asn Lys Asn Val Cys Trp Val Gln Asn Arg Asp Gly
          195         200         205
Asp Ile Val His Arg Ile Pro Val Asn His Tyr Gly Leu Ile Gly Asp
          210         215         220
Tyr Ser Asn Ala Leu Val Ala Arg Arg Asn Val Asp Ala Ile Ser Phe
          225         230         235         240
Ser Ile Ser Glu Ile Pro Met Leu Arg Thr Arg Pro Asp Thr Leu Tyr
          245         250         255
His Tyr Asp Ala Val Lys Asn Ile Ile Thr Pro Cys Phe Thr Ile Asp
          260         265         270
His Val Val Ser Glu Asn Gln Ser Ala Ser Thr Val Leu Tyr Glu Thr
          275         280         285
Ser Arg Ser Tyr Trp Ala Tyr Val Thr Leu Tyr Pro Asn Asp Ile Ser
          290         295         300
Ser Ser Ala Phe Ser Val Arg Leu Thr Thr Phe Asn Val Cys Val Ser
          305         310         315         320
Lys Lys Asp Gly Asn Val Arg Arg Ile Asp Arg Phe Thr Asp Pro Leu
          325         330         335
Leu Gly Leu Ser His Leu Phe Leu Met Met Asn Asn Gly Tyr Ile Cys
          340         345         350
Ile Ser Tyr Asp Pro Leu Glu Leu Met Asp Ala Leu Asp Lys Val Leu
          355         360         365
Thr Gln Thr Asp Leu Glu Leu Asp Val Arg Lys Arg Ala Thr Asp Leu
          370         375         380
Arg Asn Ser Leu His Glu Asn Asp Asn Asp Ile Leu Ile Ile Gly Lys
          385         390         395         400
Leu Lys Gln

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&lt;210&gt; 8148

&lt;211&gt; 83

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8148

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Ile Leu Asn Ile Met Lys Thr Leu Arg Arg Ile Lys Leu Asn Ser Leu
1          5          10          15
Ser Gln Glu Asp Leu Ala Asp Arg Glu Met Asn Met Leu Arg Gly Gly
          20          25          30
Ser Asn Cys Ser Cys Gly Cys Met Gly Val Ser Ser Lys Ala Ser Asn
          35          40          45
Leu Glu Gly Asn Lys Asp Cys Gly Tyr Pro Leu Ser Cys Thr Cys Gly
          50          55          60

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Cys Thr Gly Pro Tyr Ala Leu Ala Ala Asn Gln Glu Ala Asn Lys Gly  
 65 70 75 80  
 Ala Gly Ile

<210> 8149  
 <211> 167  
 <212> PRT  
 <213> B.fragilis

<400> 8149  
 Ser Val Ser Ile Ile Ile Leu Val Lys Phe Arg Phe Met Asp Lys Ile  
 1 5 10 15  
 Tyr Leu Trp Leu Leu Leu Ile Ser Cys Ser Cys Ser His Thr Lys  
 20 25 30  
 Glu Lys Val Ser Asn Asp Met Asp Ser Ser Leu Cys Val Ile Asp Val  
 35 40 45  
 Thr Cys Glu Tyr Pro Val Glu Lys Val Asn Ile His Asp Val Ala Asp  
 50 55 60  
 Val Glu Tyr Val Pro Leu Glu Thr Thr Arg Asn Ser Leu Leu Ala Ser  
 65 70 75 80  
 Asp Cys Ser Val Phe Arg Ile Ser Asp Asp Tyr Ile Thr Val Ala Ser  
 85 90 95  
 Gly Val Asp Asn Gly Asn Ile Phe Phe Phe Asn Arg Lys Gly Arg Tyr  
 100 105 110  
 Leu Trp Thr Phe Asn Arg Arg Gly Ser Ala Glu Glu Tyr Ser Ser  
 115 120 125  
 Ile Thr Ala Trp Asp Ala Asp Phe Gly Met Gln Glu Ile Tyr Ile Tyr  
 130 135 140  
 Asp Ser Phe Arg Lys Lys Ile Tyr Thr Leu Ile Pro Gln His Tyr Asn  
 145 150 155 160  
 Leu Thr Leu Phe Ile Ser Ser  
 165

<210> 8150  
 <211> 268  
 <212> PRT  
 <213> B.fragilis

<400> 8150  
 Leu Arg Ile Leu Gly Tyr Ile Tyr Ser Phe Asp Gly Arg Tyr Lys Arg  
 1 5 10 15  
 Ser His Ala Leu Pro Met Lys Asp Cys Thr Phe Ile Asp Leu Tyr Asn  
 20 25 30  
 Tyr Asp Lys Asp Tyr Leu Ile Gly Tyr Asn Arg Phe Tyr Asp Phe Arg  
 35 40 45  
 Lys Lys Lys Lys Val Asp Thr His Pro Tyr Tyr Leu Ile Asp Lys Gln  
 50 55 60  
 Ser Gly Glu Met Ser Ser Ile Gly Ile Val Val Asp Lys Pro Ile Ser  
 65 70 75 80  
 Glu Lys Val His Thr Glu Ile Val Lys Phe Pro Gly Gly Ala Tyr Lys  
 85 90 95  
 Asp Gln Val Leu Phe Leu Ile Thr Ala Leu Ile Lys Asn Gly Asp Ala  
 100 105 110  
 Phe Leu Ile Ala Asp Tyr Ala Leu Asp Thr Ile Tyr Ser Tyr Arg His  
 115 120 125  
 His Lys Leu Val Pro Ile Ala Val Gln Thr Pro Ser Val Tyr Ala Ser  
 130 135 140  
 Asp Pro Pro Val Ile Val Ala Cys Glu Leu Tyr Thr Asp Ser Tyr Leu

145 150 155 160  
 His Phe Arg Ile Ile Pro Met Tyr Tyr Asn Pro Ser Ala Pro Met Ser  
 165 170 175  
 Pro Met Ala Asp Ala Pro Glu Leu Val Leu Asn Arg His Thr Gly Lys  
 180 185 190  
 Ile Ala Glu Trp Lys Met Tyr Asp Tyr Asn Tyr Ser Ser Asp Ile Glu  
 195 200 205  
 Arg Pro Val Pro Thr Met Ile Leu Gln Ser Ala Asp Arg Glu Asn Tyr  
 210 215 220  
 Gly Ile Ser Met Phe Thr Ala Glu Arg Leu Ile Glu Gln Tyr Gln Ala  
 225 230 235 240  
 Gly Gly Leu Lys Gly Glu Leu Lys Asp Ile Ala Ser Arg Leu Ser Ile  
 245 250 255  
 Asp Asp Asn Asp Ile Leu Met Ile Cys Lys Tyr Lys  
 260 265

<210> 8151

<211> 418

<212> PRT

<213> B.fragilis

<400> 8151

Glu Ile Asn Met Ala Glu Ser Lys Asn Asn Lys Lys Arg Cys Ser Phe  
 1 5 10 15  
 Cys Gly Arg Ser Glu Asn Glu Val Gly Phe Leu Ile Thr Gly Met Asn  
 20 25 30  
 Gly Tyr Ile Cys Asp Ser Cys Ala Thr Gln Ala Tyr Glu Ile Thr Gln  
 35 40 45  
 Glu Ala Met Gly Ala Gly Lys Gln Ser Ala Gly Ala Thr Arg Leu Asn  
 50 55 60  
 Leu Lys Glu Leu Pro Lys Pro Val Glu Ile Lys Asn Phe Leu Asp Gln  
 65 70 75 80  
 Tyr Val Ile Gly Gln Asp Asp Ala Lys Arg Phe Leu Ala Val Ser Val  
 85 90 95  
 Tyr Asn His Tyr Lys Arg Leu Leu Gln Lys Asp Ser Gly Asp Asp Val  
 100 105 110  
 Glu Ile Glu Lys Ser Asn Ile Ile Met Val Gly Ser Thr Gly Thr Gly  
 115 120 125  
 Lys Thr Leu Leu Ala Arg Thr Ile Ala Lys Leu Leu His Val Pro Phe  
 130 135 140  
 Thr Ile Val Asp Ala Thr Val Leu Thr Glu Ala Gly Tyr Val Gly Glu  
 145 150 155 160  
 Asp Ile Glu Ser Ile Leu Thr Arg Leu Leu Gln Val Ala Asp Tyr Asn  
 165 170 175  
 Val Pro Glu Ala Glu Gln Gly Ile Val Phe Ile Asp Glu Ile Asp Lys  
 180 185 190  
 Ile Ala Arg Lys Gly Asp Asn Pro Ser Ile Thr Arg Asp Val Ser Gly  
 195 200 205  
 Glu Gly Val Gln Gln Gly Leu Leu Lys Leu Leu Glu Gly Ser Val Val  
 210 215 220  
 Asn Val Pro Pro Gln Gly Gly Arg Lys His Pro Asp Gln Lys Met Ile  
 225 230 235 240  
 Pro Val Asn Thr Lys Asn Ile Leu Phe Ile Cys Gly Gly Ala Phe Asp  
 245 250 255  
 Gly Ile Glu Lys Lys Ile Ala Gln Arg Leu Asn Thr His Val Val Gly  
 260 265 270  
 Tyr Asn Ala Ser Arg Lys Thr Ala Thr Ile Asp Lys Asn Asn Met Met  
 275 280 285  
 Gln Tyr Ile Ala Pro Gln Asp Leu Lys Ser Phe Gly Leu Ile Pro Glu

290		295		300
Ile Ile Gly Arg Leu Pro Val Leu Thr Tyr Leu Asn Pro Leu Asp Arg				
305		310		315
Asn Ala Leu Arg Ala Ile Leu Thr Glu Pro Lys Asn Ser Ile Ile Lys				320
	325		330	335
Gln Tyr Ile Lys Leu Phe Glu Met Asp Gly Val Lys Leu Thr Phe Gln				
	340		345	350
Pro Glu Val Tyr Glu Tyr Ile Val Asp Lys Ala Val Glu Tyr Lys Leu				
	355		360	365
Gly Ala Arg Gly Leu Arg Ser Ile Val Glu Thr Ile Met Met Asp Val				
	370		375	380
Met Phe Glu Ile Pro Ser Glu Asp Gln Lys Glu Tyr Glu Val Thr Leu				
385		390		395
Asp Tyr Ala Lys His Gln Leu Glu Lys Ala Asn Leu Ala Arg Leu Gln				400
	405		410	415
Thr Ala				

<210> 8152  
 <211> 246  
 <212> PRT  
 <213> B.fragilis

<400> 8152

Leu Cys Val Phe Leu Cys Leu Cys Val Leu Phe Cys Phe Phe Ala Val				
1	5	10	15	
Thr Leu Leu Ile Ile Glu Arg Asn Val Thr Met Asp Asp Phe Arg Lys				
	20	25	30	
Tyr Ala Thr Lys His Leu Gly Met Asn Ala Met Val Leu Asp Asp Val				
	35	40	45	
Ile Lys Ser Gln Ala Gly Tyr Leu Asn Pro Tyr Ile Leu Glu Glu Arg				
	50	55	60	
Gln Leu Asn Val Thr Gln Leu Asp Val Phe Ser Arg Leu Met Met Asp				
65	70	75	80	
Arg Ile Ile Phe Leu Gly Thr Gln Ile Asp Asp Tyr Thr Ala Asn Thr				
	85	90	95	
Leu Gln Ala Gln Leu Leu Tyr Leu Asp Ser Val Asp Pro Gly Lys Asp				
	100	105	110	
Ile Ser Ile Tyr Ile Asn Ser Pro Gly Gly Ser Val Tyr Ala Gly Leu				
	115	120	125	
Gly Ile Tyr Asp Thr Met Gln Phe Ile Ser Ser Asp Val Ala Thr Ile				
	130	135	140	
Cys Thr Gly Met Ala Ala Ser Met Ala Ser Val Leu Leu Val Ala Gly				
145	150	155	160	
Ala Lys Gly Lys Arg Ser Ala Leu Pro His Ser Arg Val Met Ile His				
	165	170	175	
Gln Pro Met Gly Gly Ala Gln Gly Gln Ala Ser Asp Ile Glu Ile Thr				
	180	185	190	
Ala Arg Glu Ile Gln Lys Leu Lys Lys Glu Leu Tyr Thr Ile Ile Ala				
	195	200	205	
Asp His Ser Gly Thr Ser Phe Asp Lys Val Trp Ala Asp Ser Asp Arg				
	210	215	220	
Asp Tyr Trp Met Thr Ala Gln Glu Ala Lys Glu Tyr Gly Met Ile Asp				
225	230	235	240	
Glu Val Leu Ile Lys Lys				
	245			

<210> 8153  
 <211> 139

<212> PRT  
 <213> B.fragilis

<400> 8153

Leu	Lys	Lys	Ile	Ala	Met	Lys	His	Leu	Leu	Ser	Thr	Ile	Ile	Phe	Leu
1				5					10					15	
Phe	Ala	Val	Ile	Leu	Lys	Gly	Asn	Ala	Glu	Ser	Tyr	Ser	Phe	Pro	Ser
			20					25					30		
Pro	Asn	Glu	Ile	Asn	Ser	Val	Ile	Asn	Leu	Asp	Leu	Lys	Gly	Ile	Phe
		35					40					45			
Ser	Ser	Thr	His	Thr	Lys	Ser	Leu	Pro	Leu	Thr	Pro	Val	Glu	Ala	Ser
	50					55					60				
Leu	Val	Asp	Asn	Thr	Leu	Leu	Asn	Ile	Ser	Phe	Val	Val	His	Ser	Gly
65					70					75				80	
Glu	Val	Thr	Val	Arg	Ile	Leu	Ser	Glu	Lys	Gly	Ile	Leu	Tyr	Ser	Ser
				85					90					95	
Cys	Ile	Asn	Ser	Asp	Gln	Gln	Asn	Ser	Leu	Ala	Ile	Ser	Val	Glu	Asp
			100					105					110		
Phe	Glu	Arg	Gly	Asp	Tyr	Lys	Leu	Glu	Leu	Thr	Thr	Pro	Ala	Gly	Gly
		115					120					125			
Tyr	Val	Tyr	Gly	Trp	Phe	Thr	Ile	Asn	Trp	Glu					
		130				135									

<210> 8154

<211> 459

<212> PRT

<213> B.fragilis

<400> 8154

Ile	His	Arg	Met	Lys	Lys	Phe	Val	Asn	Phe	Lys	Phe	Val	Val	Met	Phe
1				5					10					15	
Ala	Leu	Ala	Leu	Val	Ala	Asn	Val	Ala	Ser	Tyr	Ala	Gln	Asp	Asn	Val
			20					25					30		
Ile	Asp	Glu	Val	Val	Trp	Val	Ile	Gly	Asp	Glu	Ala	Ile	Leu	Lys	Ser
		35				40						45			
Asp	Val	Glu	Glu	Ala	Arg	Leu	Ala	Ala	Leu	Tyr	Glu	Gly	Arg	Lys	Phe
	50					55					60				
Asp	Gly	Asp	Pro	Tyr	Cys	Val	Ile	Pro	Glu	Glu	Leu	Ala	Val	Gln	Lys
65					70					75				80	
Leu	Tyr	Met	His	Gln	Ala	Val	Leu	Asp	Ser	Ile	Glu	Val	Pro	Glu	Ala
			85					90						95	
Glu	Val	Ile	Gln	Arg	Val	Asp	Tyr	Gln	Ile	Ser	Asn	Tyr	Ile	Gln	Ala
			100					105					110		
Leu	Gly	Ser	Arg	Glu	Arg	Met	Glu	Ala	Glu	Phe	Asn	Lys	Thr	Ser	Thr
		115					120					125			
Gln	Ile	Arg	Glu	Ala	Met	Arg	Glu	Asn	Ala	Arg	Asp	Gly	Leu	Ile	Val
	130					135					140				
Gln	Arg	Met	Gln	Gln	Lys	Leu	Val	Gly	Asp	Ile	Lys	Val	Thr	Pro	Ala
145					150					155				160	
Glu	Val	Arg	Arg	Tyr	Phe	Lys	Glu	Leu	Pro	Gln	Asp	Ser	Ile	Pro	Tyr
			165						170					175	
Val	Pro	Thr	Gln	Val	Glu	Val	Gln	Ile	Ile	Thr	Gln	Gln	Pro	Lys	Ile
		180					185						190		
Pro	Val	Ala	Glu	Ile	Glu	Asp	Val	Lys	Arg	Arg	Leu	Arg	Glu	Tyr	Thr
		195					200					205			
Asp	Arg	Ile	Asn	Lys	Gly	Glu	Ser	Asp	Phe	Ser	Thr	Leu	Ala	Leu	Leu
	210					215					220				
Tyr	Ser	Glu	Asp	Arg	Gly	Ser	Ala	Ile	Lys	Gly	Gly	Glu	Thr	Gly	Phe
225					230					235					240

114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999 1000

Met Gly Lys Gly Gln Met Val Pro Glu Tyr Ala Asn Val Ala Phe Asn  
 245 250 255  
 Leu Gln Asp Thr Lys Lys Ile Ser Lys Ile Val Glu Ser Glu Tyr Gly  
 260 265 270  
 Phe His Ile Ile Gln Leu Ile Glu Lys Arg Gly Asp Arg Ile Asn Thr  
 275 280 285  
 Arg His Ile Leu Leu Lys Pro Lys Val Ser Asp Lys Glu Leu Asp Glu  
 290 295 300  
 Ala Asn Ala Arg Leu Asp Ser Ile Ala Asn Asp Ile Arg Ser Asp Lys  
 305 310 315 320  
 Phe Thr Phe Asp Gln Ala Ala Ser Ala Leu Ser Gln Asp Lys Asp Thr  
 325 330 335  
 Arg Asn Ser His Gly Leu Met Gln Asn Pro Gln Asn Gln Thr Ala Lys  
 340 345 350  
 Phe Glu Met Gln Asp Leu Pro Gln Glu Ile Ala Lys Val Val Asp Lys  
 355 360 365  
 Met Asn Ile Gly Glu Ile Ser Lys Ala Phe Thr Met Val Asn Pro Lys  
 370 375 380  
 Asp Gly Lys Glu Val Cys Ala Ile Val Lys Leu Lys Ser Arg Ile Asn  
 385 390 395 400  
 Gly His Lys Ala Thr Ile Thr Asp Asp Tyr Gln Asn Leu Lys Glu Ile  
 405 410 415  
 Val Leu Asp Lys Arg Arg Glu Glu Ala Leu Gln Lys Trp Ile Val Glu  
 420 425 430  
 Lys Gln Lys His Thr Tyr Val Arg Ile Asn Pro Ala Trp Gln Arg Cys  
 435 440 445  
 Asp Phe Lys Tyr Pro Gly Trp Ile Lys Lys Asp  
 450 455

&lt;210&gt; 8155

&lt;211&gt; 323

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8155

Asn Glu Val Val Phe Pro Ala Pro Phe Gly Pro Ser Lys Pro Thr Ile  
 1 5 10 15  
 Ser Pro Cys Phe Thr Leu Met Glu Thr Trp Leu Thr Thr Val Arg Leu  
 20 25 30  
 Pro Tyr Phe Phe Thr Lys Ser Ser Val Arg Ser Thr Ile Leu Ala  
 35 40 45  
 Phe Phe His Ile Leu Cys Tyr Phe Ala Ala Asn Val Ala Lys Ile Ser  
 50 55 60  
 Arg Lys Asn Val His Leu Gln Thr Asn Ile Arg Val Met Ile Lys Ala  
 65 70 75 80  
 Leu Arg Thr Val Gly Arg Tyr Ile Met Leu Met Gly Arg Thr Phe Ser  
 85 90 95  
 Arg Pro Glu Arg Met Arg Met Phe Phe Arg Gln Tyr Ile Lys Glu Ile  
 100 105 110  
 Glu Gln Leu Gly Val Asn Ser Ile Gly Ile Val Leu Leu Ile Ser Phe  
 115 120 125  
 Phe Ile Gly Ala Val Ile Thr Ile Gln Ile Lys Leu Asn Ile Glu Ser  
 130 135 140  
 Pro Trp Met Pro Arg Trp Thr Val Gly Tyr Val Thr Arg Glu Ile Leu  
 145 150 155 160  
 Leu Leu Glu Phe Ser Ser Ser Ile Met Cys Leu Ile Leu Ala Gly Lys  
 165 170 175  
 Val Gly Ser Asn Ile Ala Ser Glu Leu Gly Thr Met Arg Val Thr Gln  
 180 185 190



Gln Ile Asp Ala Leu Glu Ile Met Gly Val Asn Ser Ala Asn Tyr Leu  
 195 200 205  
 Ile Leu Pro Lys Ile Thr Ala Met Val Thr Met Ile Pro Ile Leu Val  
 210 215 220  
 Thr Phe Ser Ile Phe Ala Gly Ile Ile Gly Ala Phe Ala Thr Cys Trp  
 225 230 235 240  
 Phe Gly Gly Ile Met Thr Ala Thr Asp Leu Glu Tyr Gly Leu Gln Tyr  
 245 250 255  
 Met Phe Val Glu Trp Phe Val Trp Cys Gly Ile Ile Lys Ser Leu Phe  
 260 265 270  
 Phe Ala Phe Ile Ile Ala Ser Val Ser Ser Phe Phe Gly Tyr Thr Val  
 275 280 285  
 Glu Gly Gly Ser Ile Glu Val Gly Lys Ala Ser Thr Asp Ser Val Val  
 290 295 300  
 Ser Ser Ser Val Leu Ile Leu Phe Ala Asp Leu Val Leu Thr Lys Leu  
 305 310 315 320  
 Leu Met Gly

<210> 8156  
 <211> 634  
 <212> PRT  
 <213> B.fragilis

<400> 8156  
 Thr Lys Thr Val Lys Ala Lys Ser Ile Met Ser Asp Ile Ile His Leu  
 1 5 10 15  
 Leu Pro Asp Ser Val Ala Asn Gln Ile Ala Ala Gly Glu Val Ile Gln  
 20 25 30  
 Arg Pro Ala Ser Val Ile Lys Glu Leu Val Glu Asn Ala Ile Asp Ala  
 35 40 45  
 Glu Ala Gln Asn Ile His Val Leu Val Thr Asp Ala Gly Lys Thr Cys  
 50 55 60  
 Ile Gln Val Ile Asp Asp Gly Lys Gly Met Ser Glu Thr Asp Ala Arg  
 65 70 75 80  
 Leu Ser Phe Glu Arg His Ala Thr Ser Lys Ile Arg Glu Ala Ser Asp  
 85 90 95  
 Leu Phe Ala Leu Arg Thr Met Gly Phe Arg Gly Glu Ala Leu Ala Ser  
 100 105 110  
 Ile Ala Ala Val Ala Gln Val Glu Leu Lys Thr Arg Pro Glu Ser Glu  
 115 120 125  
 Glu Leu Gly Thr Lys Ile Ile Ala Gly Ser Lys Val Glu Ser Gln  
 130 135 140  
 Glu Ala Val Ser Cys Pro Lys Gly Ser Asn Phe Ser Ile Lys Asn Leu  
 145 150 155 160  
 Phe Phe Asn Ile Pro Ala Arg Arg Lys Phe Leu Lys Ala Asn Ser Thr  
 165 170 175  
 Glu Leu Ser Asn Ile Leu Ala Glu Phe Glu Arg Ile Ala Leu Val His  
 180 185 190  
 Pro Glu Val Ala Phe Ser Leu Tyr Ser Asn Asp Ser Glu Leu Phe Asn  
 195 200 205  
 Leu Pro Ala Cys His Leu Arg Gln Arg Ile Leu Ser Val Phe Gly Lys  
 210 215 220  
 Lys Leu Asn Gln Gln Leu Leu Ser Val Glu Val Asn Thr Thr Met Val  
 225 230 235 240  
 Lys Val Ser Gly Tyr Val Ala Lys Pro Glu Thr Ala Arg Lys Lys Gly  
 245 250 255  
 Ala His Gln Tyr Phe Phe Val Asn Gly Arg Tyr Met Arg His Pro Tyr  
 260 265 270

Phe His Lys Ala Val Met Asp Ala Tyr Glu Gln Leu Ile Pro Ala Gly  
 275 280 285  
 Glu Gln Ile Ser Tyr Phe Ile Tyr Phe Glu Val Asp Pro Ala Asn Ile  
 290 295 300  
 Asp Val Asn Ile His Pro Thr Lys Thr Glu Ile Lys Phe Glu Asn Glu  
 305 310 315 320  
 Gln Ala Ile Trp Gln Ile Leu Ser Ala Ser Ile Lys Glu Ser Leu Gly  
 325 330 335  
 Lys Phe Asn Ala Val Pro Ser Ile Asp Phe Asp Thr Glu Asp Met Pro  
 340 345 350  
 Asp Ile Pro Ala Phe Glu Gln Asn Leu Pro Pro Ala Pro Pro Lys Val  
 355 360 365  
 His Phe Asn Ser Asp Phe Asn Pro Phe Lys Pro Ser Ser Ser Ser Gly  
 370 375 380  
 Gly Gly Asn Tyr Ser Arg Pro Lys Val Asp Trp Glu Asp Leu Tyr Gly  
 385 390 395 400  
 Gly Leu Glu Lys Ala Ser Lys Met Asn Gln Pro Phe Ser Asp Ser Asp  
 405 410 415  
 Pro Glu Ser Glu Glu Phe Ala Val Ile Glu Glu Glu Ser Ile Ala Thr  
 420 425 430  
 Ala Ala Pro Glu Thr Leu Tyr Ala Gly Glu Pro Ala Val Ile Glu Lys  
 435 440 445  
 Gly Thr Gln His Leu Gln Phe Lys Gly Arg Phe Ile Leu Thr Ser Val  
 450 455 460  
 Lys Ser Gly Leu Met Leu Ile Asp Gln His Arg Ala His Ile Arg Val  
 465 470 475 480  
 Leu Phe Asp Arg Tyr Arg Ala Gln Ile Gln Gln Lys Gln Gly Phe Ser  
 485 490 495  
 Gln Gly Val Leu Phe Pro Glu Ile Leu Gln Leu Pro Ala Ser Glu Ala  
 500 505 510  
 Ala Val Leu Gln Ser Ile Met Asp Asp Leu Ser Ala Val Gly Phe Asp  
 515 520 525  
 Leu Ser Asp Leu Gly Gly Gly Ser Tyr Ala Ile Asn Gly Val Pro Ser  
 530 535 540  
 Gly Ile Asp Gly Leu Asn Pro Val Asp Leu Val Arg Ser Met Leu His  
 545 550 555 560  
 Thr Ala Met Glu Lys Gly Asn Asp Val Lys Glu Glu Ile Gln Asp Ile  
 565 570 575  
 Leu Ala Leu Thr Leu Ala Arg Ala Ala Ile Val Tyr Gly Gln Val  
 580 585 590  
 Leu Ser Asn Glu Glu Met Val Ser Leu Val Asp Asn Leu Phe Ala Cys  
 595 600 605  
 Pro Ser Pro Asn Tyr Thr Pro Asp Gly Arg Val Val Leu Thr Thr Ile  
 610 615 620  
 Lys Glu Glu Glu Ile Asp Lys Leu Phe Arg  
 625 630

&lt;210&gt; 8157

&lt;211&gt; 236

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8157

Cys Phe Leu Phe Ile Phe Val Gln Ser Lys Lys Lys Gln Thr Ile Asn  
 1 5 10 15  
 Thr Asp Lys Gly Tyr Met Glu Ala Lys Ala Glu Ile Leu Leu Val Asp  
 20 25 30  
 Asp His Ala Leu Val Leu Glu Gly Met Arg Arg Met Leu Glu Ser Val  
 35 40 45

Ser Asp Val Arg Val Ala Asp Ala Val Thr Ser Gly Ala Lys Ala Ala  
 50 55 60  
 Glu Leu Ile Gly Glu Arg Asp Tyr Asp Ile Tyr Val Leu Asp Val Asn  
 65 70 75 80  
 Leu Pro Asp Ile Ser Gly Phe Asp Leu Val Asp Met Ile Arg Glu Ile  
 85 90 95  
 Asn Glu Ser Ala Arg Ile Ile Ile Ser Thr Met His Glu Glu Ile Trp  
 100 105 110  
 Ile Ile Asn Arg Leu Ile Arg Gln Lys Val Asn Ala Val Ile Leu Lys  
 115 120 125  
 Ser Ser Glu Ala Val Glu Phe Glu Asn Ala Val Lys Ser Val Leu Glu  
 130 135 140  
 Gly Asn Pro Tyr Thr Cys Pro Arg Phe Gln Ser Ile Arg Gln Lys Leu  
 145 150 155 160  
 Ser Leu Ser Pro Val Gln Ile His Ser Lys Asp Ile Pro Thr Lys Arg  
 165 170 175  
 Glu Leu Asp Val Leu Lys Ala Val Ala Arg Gly Cys Asn Thr His Glu  
 180 185 190  
 Val Ala Ala Glu Leu Lys Ile Ser Glu Asn Thr Val Glu Thr Phe Arg  
 195 200 205  
 Lys Arg Leu Ile Gln Lys Phe Cys Ala Lys Asn Ala Ile Asp Met Val  
 210 215 220  
 Val Lys Ala Met Ser Lys Gly Trp Ile Glu Leu Glu  
 225 230 235

<210> 8158  
 <211> 410  
 <212> PRT  
 <213> B.fragilis

<400> 8158  
 Tyr Leu Ile Phe Asn Ala Met Asn Tyr Tyr Leu Tyr Ile Glu Pro Tyr  
 1 5 10 15  
 Thr Leu Phe Phe Arg Lys Lys Gly Glu Cys Leu Phe Tyr Asn Thr Leu  
 20 25 30  
 Asn Lys Lys Val Leu Lys Ile Asp Val Ser Asn Asp Met Tyr Phe Ile  
 35 40 45  
 Leu Asp Lys Leu Glu Thr Asp Lys Tyr Thr Ile Leu Ser Asp Glu Asn  
 50 55 60  
 Leu Gln Thr Gln Thr Val Ser Phe Trp Val Asn Arg Leu Arg Glu Thr  
 65 70 75 80  
 Phe Asn Gly Asp Ile Leu Pro Phe Ser Asp Gly Ser Val Pro Pro Ala  
 85 90 95  
 Ile Phe Pro Pro Phe Ile Asn Asn Gln Arg Asp Phe Glu Arg Leu Asn  
 100 105 110  
 Thr Tyr Glu Trp Val Glu Lys Asp Asn Gln Val Met Asn Tyr Leu Glu  
 115 120 125  
 Glu Ile Tyr Leu Tyr Leu Asn Gly Cys Glu Glu Glu Asp Asp Ser Ile  
 130 135 140  
 Trp Lys Gln Ile Pro Ser Tyr Leu Cys Ser Asp Lys Glu Met Asp Ser  
 145 150 155 160  
 Arg Lys Leu Leu Gln Trp Leu Asp Gly Cys Ile Asp Lys Gln Ile Ser  
 165 170 175  
 Gln Val Tyr Leu Leu Gly Gly Asp Val Leu Met Tyr Lys Asp Leu Asn  
 180 185 190  
 Glu Ile Trp Gly Met Leu Glu Gln Lys Ser Met Ser Ile Gln Leu Tyr  
 195 200 205  
 Tyr Arg Tyr Asp Leu Phe Thr Glu Asn His Lys Lys Leu Leu Asn Ala  
 210 215 220

Thr Ile Gly Gln Leu Thr Phe Val Val Pro Met Trp Lys Phe Asp Glu  
 225 230 235 240  
 Glu Leu Phe Ser Ser Leu Ser Arg Thr Val Glu Gly Ile Glu Gln Asn  
 245 250 255  
 Lys Arg Trp Leu Phe Leu Ile Thr Ser Asp Asn Glu Tyr Glu Leu Ala  
 260 265 270  
 Glu Gln Leu Val Ser Lys Tyr Ser Leu Glu Ser Arg Ser Ile Arg Pro  
 275 280 285  
 Val Tyr Lys Glu Asp Asn Leu Ser Phe Phe Lys Asp Ala Val Tyr Leu  
 290 295 300  
 Glu Glu Thr Asp Ile Cys Asn Thr Cys Leu Glu Lys Arg Asp Phe Tyr  
 305 310 315 320  
 Val Ser Gln Lys Ile Asn Lys Asn Asp Phe Gly Arg Leu Thr Val Leu  
 325 330 335  
 Pro Asp Asp Lys Ile Tyr Ala Asn Val Asn His Ala Glu Ile Gly Val  
 340 345 350  
 Met Glu Lys Asp Thr Ile Ala Ser Val Leu Tyr Lys Glu Met Thr Glu  
 355 360 365  
 Gly His Ser Trp Leu Arg Ile Arg Asp Gln Lys Pro Cys Cys Asp Cys  
 370 375 380  
 Ile Tyr Gln Trp Leu Cys Pro Ser Pro Ser Asn Tyr Glu Leu Ala Ile  
 385 390 395 400  
 Gly Lys Pro Asn Leu Cys His Val Lys Pro  
 405 410

<210> 8159  
 <211> 539  
 <212> PRT  
 <213> B.fragilis

<400> 8159  
 Val Ser Ala Phe Leu Leu Ile Ile His Thr Leu Phe Ile Thr Tyr Asp  
 1 5 10 15  
 Lys Gln Tyr Phe Val Thr Leu Arg Thr Lys Tyr Leu Ile Ser Lys Ser  
 20 25 30  
 Met Ser Glu Ser Lys Arg Ile Lys Thr Ala Leu Val Ser Val Tyr His  
 35 40 45  
 Lys Glu Gly Leu Asp Glu Ile Ile Thr Lys Leu His Glu Glu Gly Val  
 50 55 60  
 Glu Phe Leu Ser Thr Gly Gly Thr Arg Gln Phe Ile Glu Ser Leu Gly  
 65 70 75 80  
 Tyr Pro Cys Lys Ala Val Glu Asp Leu Thr Ser Tyr Pro Ser Ile Leu  
 85 90 95  
 Gly Gly Arg Val Lys Thr Leu His Pro Lys Ile Phe Gly Gly Ile Leu  
 100 105 110  
 Cys Arg Arg Gly Leu Glu Gln Asp Ile Gln Gln Ile Glu Lys Tyr Glu  
 115 120 125  
 Ile Pro Glu Ile Asp Leu Val Ile Val Asp Leu Tyr Pro Phe Glu Ala  
 130 135 140  
 Thr Val Ala Ser Gly Ala Asp Glu Ala Ala Ile Ile Glu Lys Ile Asp  
 145 150 155 160  
 Ile Gly Gly Ile Ser Leu Ile Arg Ala Ala Lys Asn Phe Asn Asp  
 165 170 175  
 Val Ile Ile Val Ala Ser Gln Ala Gln Tyr Lys Pro Leu Leu Asp Met  
 180 185 190  
 Leu Met Glu His Gly Ala Thr Ser Ser Leu Glu Glu Arg Arg Trp Met  
 195 200 205  
 Ala Lys Glu Ala Phe Ala Val Ser Ser His Tyr Asp Ser Ala Ile Phe  
 210 215 220

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Asn	Tyr	Phe	Asp	Ala	Glu	Glu	Gly	Ser	Ala	Phe	Arg	Cys	Ser	Ala	Asn
225					230					235					240
Ser	Gln	Lys	Thr	Leu	Arg	Tyr	Gly	Glu	Asn	Pro	His	Gln	Lys	Gly	Tyr
				245					250					255	
Phe	Tyr	Gly	Asn	Leu	Asp	Glu	Met	Phe	Asp	Gln	Ile	His	Gly	Lys	Glu
			260					265					270		
Ile	Ser	Tyr	Asn	Asn	Leu	Leu	Asp	Ile	Asn	Ala	Ala	Val	Asp	Leu	Ile
		275					280					285			
Asp	Glu	Phe	Asp	Asp	Val	Thr	Phe	Ala	Ile	Leu	Lys	His	Asn	Asn	Ala
290						295					300				
Cys	Gly	Leu	Ala	Ser	Arg	Pro	Thr	Val	Leu	Glu	Ala	Trp	Lys	Asp	Ala
305					310					315					320
Leu	Ala	Gly	Asp	Pro	Val	Ser	Ala	Phe	Gly	Gly	Val	Leu	Ile	Thr	Asn
				325					330					335	
Ala	Val	Ile	Asp	Lys	Glu	Thr	Ala	Glu	Glu	Ile	Asn	Lys	Ile	Phe	Phe
			340					345					350		
Glu	Val	Val	Ile	Ala	Pro	Asp	Tyr	Asp	Val	Asp	Ala	Leu	Glu	Ile	Leu
		355					360					365			
Gly	Gln	Lys	Lys	Asn	Arg	Ile	Ile	Leu	Val	Arg	Lys	Glu	Ala	Lys	Leu
370						375					380				
Pro	Arg	Lys	Gln	Phe	Arg	Ser	Leu	Leu	Asn	Gly	Val	Leu	Val	Gln	Asp
385					390					395					400
Arg	Asp	Leu	Asn	Ile	Glu	Thr	Thr	Ala	Asp	Leu	Lys	Thr	Val	Thr	Asp
				405					410					415	
Lys	Ala	Pro	Thr	Pro	Glu	Glu	Val	Glu	Asp	Met	Leu	Phe	Ala	Asn	Lys
			420					425					430		
Ile	Val	Lys	Asn	Ser	Lys	Ser	Asn	Ala	Ile	Val	Leu	Ala	Lys	Gly	Lys
		435					440					445			
Gln	Leu	Leu	Ala	Ser	Gly	Val	Gly	Gln	Thr	Ser	Arg	Val	Asp	Ala	Leu
	450					455					460				
Lys	Gln	Ala	Ile	Glu	Lys	Ala	Lys	Leu	Phe	Gly	Phe	Asp	Leu	Gln	Gly
465					470					475					480
Ala	Val	Met	Ala	Ser	Asp	Ala	Phe	Phe	Pro	Phe	Pro	Asp	Cys	Val	Glu
				485					490					495	
Ile	Ala	Asp	Lys	Glu	Gly	Val	Thr	Ala	Val	Ile	Gln	Pro	Gly	Gly	Ser
			500					505					510		
Val	Lys	Asp	Gln	Leu	Thr	Phe	Asp	Tyr	Cys	Asn	Glu	His	Gly	Met	Ala
		515					520					525			
Met	Val	Thr	Thr	Gly	Ile	Arg	His	Phe	Lys	His					
	530					535									

&lt;210&gt; 8160

&lt;211&gt; 127

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8160

Gln	Thr	Leu	Thr	Phe	Met	Asn	Phe	Lys	Glu	Ser	Lys	Ala	Ile	Tyr	Leu
1				5					10					15	
Gln	Ile	Ala	Asp	Arg	Ile	Cys	Asp	Glu	Ile	Leu	Leu	Gly	Gln	Tyr	Gln
			20					25					30		
Glu	Glu	Glu	Arg	Ile	Pro	Ser	Val	Arg	Glu	Tyr	Ala	Ala	Met	Val	Glu
		35					40					45			
Val	Asn	Ala	Asn	Thr	Ala	Met	Arg	Ser	Phe	Asp	Tyr	Leu	Gln	Ser	Gln
	50					55				60					
Asp	Ile	Ile	Tyr	Asn	Lys	Arg	Gly	Ile	Gly	Tyr	Phe	Val	Ser	Ser	Gly
65					70				75						80
Ala	Lys	Glu	Leu	Ile	Phe	Ser	Leu	Arg	Arg	Glu	Thr	Phe	Leu	Lys	Asp
				85					90					95	

Glu Leu Glu His Val Phe Arg Gln Leu Tyr Thr Leu Gly Val Ser Asp  
                   100                  105                  110  
 Asp Glu Leu Leu Thr Met Tyr Arg Asn Phe Met Met Lys Gln Lys  
                   115                  120                  125

<210> 8161  
 <211> 220  
 <212> PRT  
 <213> B.fragilis

<400> 8161  
 Lys Arg Thr Thr Met Ser Ala Glu Val Gln Glu Ser Gly Lys Lys Lys  
 1                  5                  10                  15  
 Gly Asn Ser Lys Gln Lys Lys Met Thr Val Arg Val Asp Phe Thr Pro  
                   20                  25                  30  
 Met Val Asp Met Asn Met Leu Leu Ile Thr Phe Phe Met Leu Cys Thr  
                   35                  40                  45  
 Ser Leu Ser Lys Pro Gln Thr Met Glu Ile Ser Met Pro Ser Asn Asp  
                   50                  55                  60  
 Lys Asn Ile Thr Glu Glu Gln Gln Ser Lys Val Lys Ala Ser Gln Ala  
 65                  70                  75                  80  
 Ile Thr Leu Leu Leu Gly Pro Asp Asp Lys Leu Tyr Tyr Tyr Glu Gly  
                   85                  90                  95  
 Glu Pro Asn Tyr Lys Asp Tyr Thr Ser Leu Lys Glu Thr Thr Tyr Lys  
                   100                  105                  110  
 Pro Asp Gly Leu Arg Gly Ile Leu Lys Lys Asn Ala Thr Ala Val  
                   115                  120                  125  
 Arg Gln Val Asn Asp Leu Lys Gln Lys Lys Leu Glu Leu Lys Ile Ser  
                   130                  135                  140  
 Glu Asp Glu Phe Thr Lys Gln Leu Ser Glu Ile Lys Ser Gly Lys Asn  
 145                  150                  155                  160  
 Thr Pro Thr Val Ile Ile Lys Ala Met Asp Asn Ala Ser Tyr Lys Asn  
                   165                  170                  175  
 Leu Ile Asp Ala Leu Asp Glu Met Gln Ile Cys Asn Ile Gly Lys Tyr  
                   180                  185                  190  
 Val Ile Thr Asn Ile Ala Glu Ala Asp Glu Phe Leu Val Lys Asn Phe  
                   195                  200                  205  
 Glu Ser Lys Gly Glu Leu Ser Gln Asn Ile Ala Asp  
                   210                  215                  220

<210> 8162  
 <211> 473  
 <212> PRT  
 <213> B.fragilis

<400> 8162  
 Phe Lys Ser Ala Asn Ile Arg Leu Tyr Leu Lys Thr Ser Tyr Leu Cys  
 1                  5                  10                  15  
 Ser Ser Gln Lys Glu Ala Lys Ala Asn Ile Met Arg Ser Ile Leu Ile  
                   20                  25                  30  
 Val Glu Asp Asp Ile Thr Phe Gly Met Met Leu Lys Thr Trp Leu Gly  
                   35                  40                  45  
 Lys Lys Gly Phe Asn Val Ser Ser Val Ser Asn Ile Ala Arg Ala Gln  
                   50                  55                  60  
 Lys His Ile Asp Ala Gln Pro Val Asp Leu Ile Leu Ser Asp Leu Arg  
 65                  70                  75                  80  
 Leu Pro Asp His Asp Gly Ile His Leu Leu Lys Trp Met Gly Glu Lys  
                   85                  90                  95  
 Glu Leu His Ile Pro Leu Ile Ile Met Thr Gly Tyr Ala Asp Ile Gln

100 105 110  
 Ser Ala Val Gln Ala Met Lys Leu Gly Ala Gln Asp Tyr Ile Ala Lys  
 115 120 125  
 Pro Val Asn Pro Glu Glu Leu Leu Lys Lys Met Ser Glu Ala Leu Gln  
 130 135 140  
 Lys Lys Glu Ala Pro Leu Pro Lys Thr Pro Leu Thr Glu Lys Ser Pro  
 145 150 155 160  
 Lys Thr Lys Gln Glu Ser His Ser Tyr Leu Glu Gly Glu Ser Asp Ala  
 165 170 175  
 Ala Lys Gln Leu Tyr Asn Tyr Val Ser Leu Val Ala Pro Thr Asn Met  
 180 185 190  
 Ser Val Leu Ile Asn Gly Ala Ser Gly Thr Gly Lys Glu Tyr Val Ala  
 195 200 205  
 His Arg Ile His Gln Leu Ser Lys Arg Ser Asp Lys Pro Phe Ile Ala  
 210 215 220  
 Ile Asp Cys Gly Ser Ile Pro Lys Glu Leu Ala Ala Ser Glu Phe Phe  
 225 230 235 240  
 Gly His Ile Lys Gly Ser Phe Thr Gly Ala Leu Ser Asp Lys Thr Gly  
 245 250 255  
 Ala Phe Val Ala Ala Asn Gly Gly Thr Ile Phe Leu Asp Glu Ile Gly  
 260 265 270  
 Asn Leu Ser Tyr Glu Ile Gln Ile Gln Leu Leu Arg Ala Leu Gln Glu  
 275 280 285  
 Arg Lys Ile Arg Pro Val Gly Ser Asn Ser Glu Ile Thr Val Asp Ile  
 290 295 300  
 Arg Leu Val Ser Ala Thr Asn Glu Asn Leu Glu Gln Ala Ile Glu Lys  
 305 310 315 320  
 Gly Thr Phe Arg Glu Asp Leu Tyr His Arg Ile Asn Glu Phe Thr Leu  
 325 330 335  
 Arg Met Pro Thr Leu Lys Glu Arg Gly Gly Asp Ile Leu Leu Phe Ala  
 340 345 350  
 Asn Phe Phe Leu Asp Gln Ala Asn Lys Glu Leu Asp Lys Gln Leu Ile  
 355 360 365  
 Gly Phe Asp Ala Asn Ala Ser Lys Ala Leu Leu Glu Tyr His Trp Pro  
 370 375 380  
 Gly Asn Leu Arg Gln Met Lys Asn Ile Ile Lys Arg Ala Thr Leu Leu  
 385 390 395 400  
 Ala Gln Gly Ser Phe Ile Gly Leu Ala Glu Leu Gly Ser Glu Ile Leu  
 405 410 415  
 Glu Thr Gln Leu Ser Thr Pro Lys Met Thr Leu Arg Asp Glu Asp Ala  
 420 425 430  
 Glu Lys Glu His Ile Leu Glu Ala Leu Arg Gln Thr Gly Asn Asn Lys  
 435 440 445  
 Ser Arg Ala Ala Gln Leu Leu Asp Ile Asp Arg Lys Thr Leu Tyr Asn  
 450 455 460  
 Lys Leu Lys Leu Tyr Gly Ile Asp Leu  
 465 470

<210> 8163  
 <211> 431  
 <212> PRT  
 <213> B.fragilis

<400> 8163  
 Tyr Asp Met Ala Lys Ile Gln Ile Lys Ser Glu Lys Leu Thr Pro Phe  
 1 5 10 15  
 Gly Gly Ile Phe Ser Ile Met Glu Lys Phe Asp Ser Met Leu Ser Pro  
 20 25 30  
 Val Ile Asp Ser Thr Leu Gly Gln Arg Cys Ser Ser Ile Phe Gly Tyr

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100
1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	

<400> 8164  
Ala Thr Gly Ala Gly Arg Leu Ser Tyr Ile Cys Tyr Ser Thr Phe Gly  
1 5 10 15  
Glu Tyr Phe Gly Ile Gly Leu Phe Lys Ile Asn Phe Thr Asn Lys Met



	20		25		30										
Arg	Ile	Leu	Arg	Asp	Leu	Gln	Asn	Val	Ile	Ala	Ser	Glu	Tyr	Tyr	Lys
	35						40					45			
Thr	Arg	His	Asp	Val	Ala	Ala	Lys	Leu	Phe	Leu	Phe	Phe	Pro	Val	Leu
	50					55					60				
Leu	Thr	Val	Ala	Phe	Ile	Val	Tyr	Asp	Leu	Trp	Asn	Leu	Ser	Gln	Glu
65					70					75					80
Gly	Tyr	Asp	Gly	Thr	Asn	Leu	Trp	Ile	Tyr	Asn	Ile	Gly	Arg	Thr	Leu
			85						90					95	
Phe	Met	Phe	Tyr	Gly	Met	Leu	Tyr	Pro	Leu	Met	Ala	Ala	Leu	Phe	Cys
			100					105						110	
Ala	Ala	Tyr	Ile	Gly	Lys	Glu	Phe	Lys	Asn	Asp	Asn	Tyr	Leu	Leu	Leu
		115						120					125		
Phe	Leu	Phe	Pro	Val	Pro	Arg	Gly	Thr	Val	Tyr	Val	Ala	Lys	Leu	Ile
	130					135					140				
Tyr	Leu	Leu	Ser	Met	Thr	Phe	Leu	Ser	Val	Leu	Ile	Ala	Tyr	Val	Ala
145					150					155					160
Phe	Met	Leu	Ser	Gly	Phe	Ile	Leu	Gly	Val	Cys	Leu	Pro	Ser	Met	Gly
				165					170					175	
Phe	Gln	Asn	Phe	Asp	Val	Arg	Ile	Leu	Val	Ile	Ser	Val	Phe	Phe	Arg
			180					185						190	
Val	Phe	Ile	Gly	Leu	Leu	Pro	Ile	Leu	Val	Ile	Gln	Tyr	Val	Phe	Ser
	195						200					205			
Phe	Leu	Phe	Lys	Asn	Tyr	Ala	Leu	Ala	Leu	Gly	Phe	Ser	Phe	Phe	Met
	210					215					220				
Thr	Val	Phe	Ser	Met	Ile	Ala	Ser	Asn	Trp	Arg	Tyr	Ile	Asn	Phe	Ile
225					230					235					240
Pro	Tyr	Ser	Ser	Ile	Leu	His	Ala	Tyr	Ser	Ser	Phe	Met	Gln	Gln	Thr
				245					250					255	
Val	Tyr	Tyr	Trp	Lys	Ser	Phe	Glu	Thr	Ile	Asn	Ile	Ser	Tyr	Phe	Ile
			260					265					270		
Val	Phe	Ser	Ile	Val	Gly	Tyr	Ile	Leu	Tyr	Arg	Tyr	Lys	Lys	Trp	Arg
	275						280					285			

&lt;210&gt; 8165

&lt;211&gt; 513

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8165

Pro	Lys	Ile	Tyr	Phe	Thr	Met	Ile	Gly	Tyr	Arg	Asn	Leu	Leu	Ile	Ser
1				5					10					15	
Leu	Phe	Cys	Ser	Met	Ala	Val	Ser	Ala	Ala	Gly	Gln	Pro	Arg	Leu	Val
			20					25				30			
Lys	Ser	Leu	Val	Pro	Asp	Met	Pro	Ser	Gln	Ala	Ser	Asp	Tyr	Phe	Cys
	35					40					45				
Thr	Trp	Asn	Leu	Gln	Gly	Tyr	Val	Ala	Ser	Tyr	Lys	Ser	Thr	Glu	Leu
	50				55						60				
Thr	Arg	Ala	Ala	Met	Thr	Glu	Asp	Tyr	Leu	Phe	Gly	Asp	Gly	Leu	Tyr
65					70					75					80
Gln	Asn	Trp	Val	Asp	Cys	Tyr	Pro	Ala	Ile	Arg	Lys	Asp	Leu	Tyr	Phe
			85					90						95	
Val	Met	Asp	Asp	Ser	Trp	Asp	Ile	Pro	Lys	Asp	Val	Asn	Asp	Ser	Pro
		100						105					110		
Asn	Pro	Tyr	Leu	Gly	Cys	Val	Glu	Leu	Ser	Ser	Asp	Arg	Phe	Pro	Ser
		115					120					125			
Phe	Arg	Gly	Asp	Ala	Val	Glu	Arg	Leu	Lys	Gln	Leu	Ser	Glu	Gln	Ile
	130					135					140				
Lys	Ser	Lys	Gly	Trp	Lys	Gly	Val	Gly	Gly	Trp	Ile	Cys	Ala	Gln	Lys

145 150 155 160  
 Ala Glu Thr His Ala Ala Ile Pro Glu Glu Glu Tyr Trp Lys Gln Arg  
 165 170 175  
 Ile Lys Ala Ala Asn Ala Ala Gly Phe Asp Tyr Trp Lys Val Asp Trp  
 180 185 190  
 Gly Lys Glu Asp Arg Asn Gly Glu Trp Arg Arg Lys Leu Thr Ala Ile  
 195 200 205  
 Gly Lys Arg Tyr Ala Pro His Leu Tyr Ile Glu His Ala Leu Arg Asn  
 210 215 220  
 Glu Phe Ile Glu Phe Ser Asp Val Phe Arg Thr Tyr Asp Val Glu Asn  
 225 230 235 240  
 Ile Thr Ala Gln Pro Ile Thr Ile Arg Arg Ile Cys Asp Leu Leu Pro  
 245 250 255  
 Tyr Lys Thr Val Glu Gly Ala Lys Gly Ile Ile Asn Cys Glu Asp Glu  
 260 265 270  
 Pro Tyr Ile Ala Val Gly Leu Gly Cys Ala Ile Gly Val Met Arg His  
 275 280 285  
 Pro Phe Ala Gly Thr Leu Pro Asp Gly Ala Gln Asp Phe Val Phe Pro  
 290 295 300  
 Pro Val Gly Arg Asp Ile Lys Arg Arg Leu Asp Glu Val Val Arg Gly  
 305 310 315 320  
 Val Arg Trp His Arg Ile Ala Glu Pro Phe Ala Val Gly Tyr Gly Thr  
 325 330 335  
 Phe Ala Ile Asp Ser Val Lys Leu Thr Asp His Trp Ile Leu Gln Glu  
 340 345 350  
 Asn Glu Thr Trp Asn Lys Gly Arg Thr Val Gly Ala Asp Val Thr Ala  
 355 360 365  
 Asp Ala Pro Ala Arg Val Ala Arg Asn Met Lys Leu Pro Glu Val Ser  
 370 375 380  
 Gly Ala Pro Leu Ser Val Cys Pro Phe Val Leu Ala Ser Arg Tyr Pro  
 385 390 395 400  
 Asn Gly Ala Val Ala Val Ser Thr Ile Gly Arg Asn Val Gly Arg Glu  
 405 410 415  
 Tyr Val Thr Glu Lys Val Ala Val Ser Ile Ser Val Asp Arg Trp Asp  
 420 425 430  
 Ile Pro Ile Gly Leu Phe Gly Tyr Phe Lys Glu Val Thr Met Val Phe  
 435 440 445  
 Pro Ser Pro Leu Lys Thr Gly Lys His Thr Val Phe Ala Gln Asp Leu  
 450 455 460  
 Ala Gly Glu Asn Pro Val Asp Ile Thr Ser Asn Val Val Ile Lys Asp  
 465 470 475 480  
 Asn Arg Leu Ile Ile Pro Gly Glu Val Ile Ser Arg Val Gly Leu Met  
 485 490 495  
 Asn Ala Ser Glu Gly Asp Cys Ser Asp Pro Gly Met Val Ile Arg Val  
 500 505 510  
 Met

<210> 8166  
 <211> 269  
 <212> PRT  
 <213> B.fragilis

<400> 8166  
 Lys Arg Asn Phe Met Lys Arg Thr Thr Tyr Ile Phe Ile Gly Ile Leu  
 1 5 10 15  
 Val Ser Val Leu Val Ile Leu Met Ala Gly Val Val Tyr Ile Ser Phe  
 20 25 30  
 Gln Lys Ser Glu Thr Asn Ser Tyr Thr Leu Thr Leu Ser Glu Lys Ile

35 40 45  
 Leu Arg Thr Glu Phe Ser Gly Ile Arg Ala Val Lys Val Tyr Ala Asn  
 50 55 60  
 Asp Thr Arg Arg Val Trp Leu Asp Glu Ala Cys Val Asn Val Val Ser  
 65 70 75 80  
 Ser Thr Asp Gly Lys Thr Arg Leu Leu Ser Pro Glu Ser Glu Tyr Leu  
 85 90 95  
 Lys Ile Ser Gln Asn Ala Asp Thr Leu Val Ile Cys Leu Asp Leu Thr  
 100 105 110  
 Thr Tyr Asp Leu Pro Lys Gln Lys Lys Glu Tyr Leu Ile Pro Ala Leu  
 115 120 125  
 Gln Ala Lys Gly Leu Gln Leu Thr Ile Glu Ala Asp Ser Asn Leu Ala  
 130 135 140  
 Phe Val Ala Asn Ala Ile Arg Gly Leu Arg Thr Arg Ile Asp Arg Leu  
 145 150 155 160  
 His Ala Asp Ser Leu Thr Thr Tyr Ile Arg Gly Gly Glu Leu Arg Leu  
 165 170 175  
 Asp Ser Cys Glu Ile Arg Ala Phe Cys Val Asp Gly Asp Gly Val Thr  
 180 185 190  
 Phe Asn Ala His Gln Ser Ile Ile Pro His Leu Tyr Leu Asp Leu Asp  
 195 200 205  
 Gly Val Arg Asn Trp Gly Val His Glu Ser Val Ile Gly Thr Glu His  
 210 215 220  
 Leu Thr Gly Ser Gly Val Tyr His Asn Asn Leu Gln Arg Gly Glu Cys  
 225 230 235 240  
 Lys Lys Met Ile Trp Thr Pro Lys Lys Glu Asp Ala Glu Leu Arg Leu  
 245 250 255  
 Thr Ile Arg Glu Lys Gly Ser Leu Ile Leu Gln Glu Glu  
 260 265

<210> 8167  
 <211> 83  
 <212> PRT  
 <213> B.fragilis

<400> 8167  
 Val Pro Glu Gln Gln Lys Val Ala Gln Asp Phe Ala Met Ser Glu Phe  
 1 5 10 15  
 Ser Leu Ile Leu Val Leu Gln Lys Glu Asn Lys Gln Asn Ser Asn Met  
 20 25 30  
 Thr Trp Gln Lys Tyr Lys Leu Asn Leu Arg Asn Ser His Leu Leu Glu  
 35 40 45  
 Glu Phe Phe Gln Ser Trp Arg Asn Leu Thr Pro Cys Phe His Pro Leu  
 50 55 60  
 Ser Thr Gln His Trp Val Arg Asp Ala Ala Val Ser Ser Asp Ile Ser  
 65 70 75 80  
 Ser Ala Arg

<210> 8168  
 <211> 100  
 <212> PRT  
 <213> B.fragilis

<400> 8168  
 Pro Ile Phe Leu Thr Ala Ala Ser Arg Arg Ser Leu Asp Arg Val Ser  
 1 5 10 15  
 Val Pro Met Trp Gly Thr Phe Leu Ser Glu Pro Leu Ser Ile Glu Gly  
 20 25 30

Leu Val Ser Arg Tyr Leu Thr Asn Asn Leu Met Glu Arg Ile Pro Ile  
           35                          40                          45  
 Leu Tyr Arg Asn Pro Leu Ile Met Lys Pro Cys Gly Ile Ile Met Leu  
           50                          55                          60  
 Ser Gly Ile Asn Leu Ser Phe Glu Arg Leu Ser Pro Ser Lys Gly Gln  
   65                          70                          75                          80  
 Val Gly Tyr Val Leu Thr Arg Ala Pro Val Ala Ser Lys Glu Ser  
                           85                          90                          95  
 Lys Leu Ser Phe  
                   100

<210> 8169  
 <211> 283  
 <212> PRT  
 <213> B.fragilis

<400> 8169  
 Ile Leu Asn Asn Lys Phe Phe Asn Lys Lys Asn Phe Ile Met Glu Thr  
 1                          5                          10                          15  
 Thr Gln Lys Lys Ser Thr Lys Ile Val Gly Ile Lys Asn Ala Gly Leu  
                           20                          25                          30  
 Val Ile Ile Cys Cys Phe Ile Ile Ala Val Cys Ile Tyr His Phe Ile  
           35                          40                          45  
 Leu Gly Asn Pro Thr Asn Phe Met Asn Asn Asp Pro Asn Asn His Pro  
   50                          55                          60  
 Leu Pro Gly Asn Phe Met Gly Thr Ile Tyr Lys Gly Gly Val Ile Val  
   65                          70                          75                          80  
 Pro Val Ile Gln Thr Leu Leu Leu Thr Val Leu Ala Leu Ser Ile Glu  
                           85                          90                          95  
 Arg Tyr Phe Ala Leu Arg Ser Ala Phe Gly Arg Gly Ser Leu Val Lys  
                           100                          105                          110  
 Phe Val Ser Asn Ile Lys Glu Ala Leu Ser Val Gly Asp Leu Arg Lys  
           115                          120                          125  
 Ala Gln Glu Ile Cys Asp Lys Gln Arg Gly Ser Val Ala Asn Val Val  
   130                          135                          140  
 Thr Ser Thr Leu Arg Lys Tyr Glu Glu Met Glu Asn Glu Ser Ser Leu  
  145                          150                          155                          160  
 Ser Lys Asp Gln Lys Leu Leu Ala Ile Gln Lys Glu Leu Glu Glu Ala  
                           165                          170                          175  
 Thr Ala Leu Glu Leu Pro Met Met Glu Gln Asn Leu Pro Ile Ile Gly  
           180                          185                          190  
 Thr Ile Thr Thr Leu Gly Thr Leu Met Gly Leu Leu Gly Thr Val Ile  
           195                          200                          205  
 Gly Met Ile Arg Ser Phe Ala Ala Leu Ala Ala Gly Gly Ser Ala Asp  
   210                          215                          220  
 Ser Met Ala Leu Ser Gln Gly Ile Ser Glu Ala Leu Ile Asn Thr Ala  
  225                          230                          235                          240  
 Phe Gly Ile Leu Thr Gly Ala Leu Ala Val Ile Ser Tyr Asn Tyr Tyr  
                           245                          250                          255  
 Thr Asn Lys Ile Asp Lys Leu Thr Tyr Ser Leu Asp Glu Val Gly Phe  
           260                          265                          270  
 Ser Ile Val Gln Thr Phe Ala Ala Thr His Lys  
           275                          280

<210> 8170  
 <211> 65  
 <212> PRT  
 <213> B.fragilis

Leu	Ile	Asn	Asn	Arg	Asp	Leu	Asn	Arg	Met	Ile	Arg	Lys	Glu	Thr	Val
1				5					10					15	
His	Ile	Ile	Trp	Gly	Thr	Ile	Gln	Ala	Gly	Leu	Val	Met	Leu	Leu	Leu
			20					25					30		
Gly	Ala	Cys	Ser	Thr	Thr	Lys	His	Leu	Pro	Glu	Gly	Glu	Ile	Leu	Tyr
		35				40						45			
Thr	Gly	Ser	Lys	Thr	Ile	Val	Glu	Asn	Glu	Pro	Gln	Ala	Pro	Leu	Thr
	50				55						60				
Glu	Asp	Ala	Leu	Thr	Glu	Leu	Asp	Ala	Ala	Leu	Asp	Lys	Ala	Pro	Ser
65					70					75					80
Thr	Lys	Ile	Leu	Gly	Phe	Val	Pro	Ile	Pro	Phe	Lys	Met	Trp	Ala	Tyr
				85					90					95	
Asn	Ser	Leu	Val	Arg	Tyr	Lys	Lys	Gly	Phe	Gly	His	Trp	Leu	Phe	Asn
			100					105					110		
Arg	Phe	Ala	Ala	Asn	Pro	Pro	Val	Phe	Ile	Ser	Thr	Val	Asn	Pro	Glu
		115					120					125			
Ile	Arg	Ala	Lys	Val	Gly	Thr	Asn	Leu	Leu	His	Asp	Tyr	Gly	Tyr	Phe
	130					135					140				
Asn	Gly	Thr	Val	Arg	Phe	Gln	Thr	Val	Pro	Asp	Lys	Lys	Asp	Ser	Leu
145					150					155					160
Lys	Ala	Ser	Ile	Arg	Tyr	Thr	Val	Asp	Met	Lys	Asp	Pro	Tyr	Tyr	Ile
				165					170					175	
Asp	Thr	Val	Tyr	Tyr	Thr	Arg	Phe	Asn	Pro	Arg	Thr	Leu	Arg	Ile	Met
			180					185					190		
Glu	Arg	Gly	Arg	Arg	Gly	Ser	Leu	Leu	Thr	Pro	Gly	Glu	Gln	Phe	Asn
		195					200					205			

Val	Ser	Asp	Leu	Asp	Ala	Glu	Arg	Ser	Arg	Ile	Ser	Thr	Leu	Leu	Arg
210						215					220				
Asn	Arg	Gly	Tyr	Phe	Tyr	Phe	Arg	Pro	Asp	Tyr	Met	Lys	Tyr	Gln	Ala
225						230				235					240
Asp	Thr	Leu	Leu	Asn	Pro	Gly	His	Val	Ser	Leu	Arg	Leu	Ile	Pro	Val
				245					250					255	
Pro	Gly	Leu	Pro	Asp	Ala	Ala	Gln	Arg	Pro	Tyr	Tyr	Val	Gly	Lys	Thr
			260					265					270		
Ser	Val	Phe	Leu	Tyr	Gly	Lys	Gly	Glu	Val	Pro	Asn	Ser	Thr	Leu	
		275					280				285				
Glu	Tyr	Arg	Gly	Leu	Asp	Ile	His	Tyr	Tyr	Lys	Lys	Met	Gln	Val	Arg
290						295					300				
Pro	Asn	Met	Leu	Tyr	Arg	Trp	Leu	Asn	Tyr	Gln	Ala	Tyr	Val	Arg	Asn
305					310					315					320
Asp	Ser	Leu	Arg	Asn	Ser	Ala	His	Ser	Arg	Leu	Tyr	Ser	Gln	Tyr	Arg
				325					330					335	
Gln	Thr	Arg	Ile	Gln	Glu	Arg	Leu	Ser	Gln	Leu	Ser	Ile	Phe	Arg	Tyr
			340					345					350		
Leu	Asp	Leu	Gln	Tyr	Ile	Pro	Gln	Asp	Ser	Thr	Ala	Thr	Cys	Asp	Thr
		355					360					365			
Leu	Asn	Val	Arg	Leu	Gln	Ala	Thr	Phe	Asp	Lys	Pro	Tyr	Asp	Ala	Glu
370					375						380				
Leu	Glu	Phe	Asn	Leu	Thr	Lys	Ser	Asn	Asn	Gln	Thr	Gly	Pro	Gly	
385				390					395					400	
Ala	Ser	Phe	Gly	Leu	Thr	Arg	Tyr	Asn	Val	Phe	Gly	Gly	Gly	Glu	Thr
			405						410					415	
Trp	Asn	Val	Lys	Leu	Lys	Gly	Ser	Tyr	Glu	Trp	Gln	Thr	Gly	Gln	Asn
			420					425					430		
Lys	Gly	Ser	Ser	Leu	Met	Asn	Ser	Trp	Glu	Met	Gly	Val	Ser	Thr	Ala
		435				440						445			
Leu	Thr	Phe	Pro	Arg	Val	Val	Phe	Pro	Ser	Phe	Gly	Gly	Arg	Glu	Tyr
450					455						460				
Asp	Phe	Pro	Ala	Thr	Thr	Thr	Phe	Arg	Leu	Tyr	Ile	Asp	Gln	Leu	Asn
465					470					475					480
Arg	Ala	Lys	Tyr	Tyr	Lys	Leu	Leu	Ala	Phe	Gly	Gly	Asn	Ala	Thr	Tyr
			485					490						495	
Asp	Phe	Gln	Pro	Thr	Arg	Ile	Ser	Arg	His	Ser	Leu	Thr	Pro	Leu	Arg
			500					505					510		
Val	Thr	Phe	Asn	Val	Leu	Gln	His	Thr	Thr	Lys	Ala	Phe	Glu	Glu	Ile
			515				520						525		
Ala	Asp	Gln	Asn	Lys	Ala	Leu	Tyr	Arg	Ser	Leu	Gln	Asn	Gln	Phe	Ile
530					535						540				
Pro	Ala	Met	Glu	Tyr	Thr	Tyr	Thr	Phe	Asp	Asn	Ala	Ala	Leu	Arg	Gly
545					550					555					560
Val	Arg	Asn	Pro	Ile	Trp	Trp	Gln	Thr	Thr	Phe	Thr	Ser	Ala	Gly	Asn
			565					570						575	
Ile	Thr	Ser	Gly	Ile	Tyr	Arg	Ile	Phe	Gly	Lys	Lys	Phe	Ser	Gln	Arg
			580					585					590		
Asp	Lys	Lys	Leu	Phe	Gly	Val	Pro	Phe	Ala	Gln	Phe	Leu	Lys	Val	Asn
		595				600						605			
Ser	Asp	Phe	Arg	Tyr	Thr	Trp	Lys	Ile	Asp	Lys	Asn	Gln	Ser	Ile	Ala
610					615						620				
Ser	Arg	Val	Ala	Gly	Gly	Ile	Ile	Trp	Ala	Tyr	Gly	Asn	Thr	Asn	Thr
625				630						635					640
Ala	Pro	Tyr	Ser	Glu	Gln	Phe	Tyr	Ile	Gly	Gly	Ala	Asn	Ser	Val	Arg
			645					650						655	
Ala	Phe	Thr	Ala	Arg	Ser	Ile	Gly	Pro	Gly	Gly	Phe	Arg	Pro	Thr	Lys
			660					665					670		
Thr	Ser	Lys	Gly	Leu	Tyr	Leu	Asp	Gln	Thr	Gly	Asp	Ile	Arg	Met	Glu

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675	680	685
Ala Asn Val Glu Tyr Arg Phe Arg Ile Tyr Gly Asp Leu His Gly Ala		
690	695	700
Val Phe Leu Asp Ala Gly Asn Val Trp Met Leu Arg Lys Asp Glu Glu		
705	710	715
Ala Pro Glu Lys Gln Leu Arg Trp Lys Thr Phe Gly Lys Gln Ile Ala		
	725	730
		735
Leu Gly Thr Gly Ala Gly Ile Arg Tyr Asp Leu Asp Phe Leu Ile Leu		
	740	745
		750
Arg Leu Asp Cys Gly Val Pro Leu His Asp Pro Tyr Asp Thr Gly Lys		
	755	760
		765
Lys Gly Tyr Tyr Asn Val Thr Gly Ser Phe Trp Lys Gly Leu Gly Leu		
	770	775
		780
His Phe Ala Val Gly Tyr Pro Phe		
785	790	

&lt;210&gt; 8173

&lt;211&gt; 283

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8173

Ile Lys Leu Asn Tyr Ser Val Ala Glu Leu Arg Leu Asn Ile Val Gly		
1	5	10
		15
Asn Tyr Ile Leu Ile Asn Gly Lys Leu Gly Phe Pro Glu Leu Gly Leu		
	20	25
		30
Leu Gly Ala Gly Ile Ser Thr Leu Phe Ser Arg Ile Val Met Val Leu		
	35	40
		45
Val Phe Ala Phe Val Phe Phe Ser Ser Arg Arg Phe Leu Arg Tyr Lys		
	50	55
		60
Leu Gly Phe Ile Arg Leu Gly Trp Ser Arg Thr Leu Phe Arg Gln Leu		
65	70	75
		80
Asn Ala Leu Gly Trp Pro Val Ala Phe Gln Met Gly Met Glu Thr Ala		
	85	90
		95
Ser Phe Ser Leu Ser Thr Val Met Val Gly Trp Leu Gly Thr Ile Ala		
	100	105
		110
Leu Ala Ser His Gln Val Met Leu Thr Ile Ser Gln Phe Thr Phe Met		
	115	120
		125
Met Phe Tyr Gly Met Gly Ala Ala Val Ala Val Arg Val Ser Asn Phe		
	130	135
		140
Lys Gly Gln Asn Asp Ile Val Asn Val Arg Arg Thr Ala Tyr Ala Gly		
145	150	155
		160
Ala His Ile Ile Leu Ala Met Gly Val Val Leu Leu Ser Ile Val Phe		
	165	170
		175
Leu Phe Arg Tyr Gln Val Gly Gly Trp Phe Thr Asp Asn Thr Glu Val		
	180	185
		190
Ser Ala Met Val Val Val Leu Met Val Pro Phe Leu Ala Tyr Gln Phe		
	195	200
		205
Gly Asp Gly Met Gln Ile Asn Phe Ala Asn Ala Leu Arg Gly Ile Ser		
	210	215
		220
Asp Val Lys Pro Met Met Leu Ile Ala Phe Ile Ala Tyr Phe Ile Ile		
225	230	235
		240
Ser Leu Pro Ala Gly Tyr Phe Phe Gly Phe Val Met Gly Trp Gly Leu		
	245	250
		255
Leu Gly Val Trp Met Ala Phe Pro Phe Gly Leu Ser Ser Ala Ala Ile		
	260	265
		270
Met Leu Trp Leu Arg Phe Arg Tyr Lys Thr Arg		
	275	280

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<210> 8174  
 <211> 347  
 <212> PRT  
 <213> B.fragilis

<400> 8174

Arg	Ile	Arg	Asn	Leu	Phe	Ile	Met	Gly	Leu	Phe	Ser	Phe	Thr	Gln	Glu
1			5						10					15	
Ile	Ala	Met	Asp	Leu	Gly	Thr	Ala	Asn	Thr	Ile	Ile	Ile	Thr	Gly	Gly
		20						25					30		
Lys	Ile	Val	Val	Asp	Glu	Pro	Ser	Val	Val	Ala	Leu	Asp	Arg	Arg	Thr
		35					40					45			
Asp	Lys	Met	Ile	Ala	Val	Gly	Glu	Lys	Ala	Lys	Leu	Met	His	Glu	Lys
	50					55					60				
Thr	His	Glu	Asn	Ile	Arg	Thr	Ile	Arg	Pro	Leu	Arg	Asp	Gly	Val	Ile
65					70					75				80	
Ala	Asp	Phe	Tyr	Ala	Cys	Glu	Gln	Met	Met	Arg	Gly	Leu	Ile	Lys	Gln
			85						90					95	
Val	Asn	Thr	Arg	Asn	Arg	Leu	Phe	Ser	Pro	Ser	Leu	Arg	Met	Val	Ile
		100						105					110		
Gly	Val	Pro	Ser	Gly	Ser	Thr	Glu	Val	Glu	Leu	Arg	Ala	Val	Arg	Asp
		115					120					125			
Ser	Ala	Glu	His	Ala	Gly	Gly	Arg	Asp	Val	Tyr	Leu	Val	Phe	Glu	Pro
	130					135					140				
Met	Ala	Ala	Ala	Ile	Gly	Ile	Gly	Ile	Asp	Val	Glu	Ala	Pro	Glu	Gly
145					150					155				160	
Asn	Met	Ile	Val	Asp	Ile	Gly	Gly	Gly	Ser	Thr	Glu	Ile	Ala	Val	Ile
			165						170					175	
Ser	Leu	Gly	Gly	Ile	Val	Ser	Asn	Asn	Ser	Ile	Arg	Ile	Ala	Gly	Asp
		180					185						190		
Asp	Leu	Thr	Ala	Asp	Ile	Gln	Glu	Tyr	Met	Ser	Arg	Gln	His	Asn	Val
	195					200					205				
Lys	Val	Ser	Glu	Arg	Met	Ala	Glu	Arg	Ile	Lys	Ile	Asn	Val	Gly	Ala
	210					215					220				
Ala	Leu	Thr	Glu	Leu	Gly	Glu	Asp	Ala	Pro	Glu	Asp	Tyr	Ile	Val	His
225					230					235				240	
Gly	Pro	Asn	Arg	Ile	Thr	Ala	Leu	Pro	Met	Glu	Val	Pro	Val	Cys	Tyr
			245						250					255	
Gln	Glu	Val	Ala	His	Cys	Leu	Glu	Lys	Ser	Ile	Ser	Lys	Ile	Glu	Thr
		260						265					270		
Ala	Ile	Leu	Ser	Ala	Leu	Glu	Asn	Thr	Pro	Pro	Glu	Leu	Tyr	Ala	Asp
	275						280					285			
Ile	Val	His	Asn	Gly	Ile	Tyr	Leu	Ala	Gly	Gly	Gly	Ala	Leu	Leu	Arg
	290					295					300				
Gly	Leu	Asp	Lys	Arg	Leu	Thr	Asp	Lys	Ile	Asn	Ile	Pro	Phe	His	Ile
305					310					315				320	
Ala	Glu	Asp	Pro	Leu	His	Ala	Val	Ala	Lys	Gly	Thr	Gly	Val	Ala	Leu
			325						330					335	
Lys	Asn	Val	Asp	Arg	Phe	Ser	Phe	Leu	Met	Arg					
		340						345							

<210> 8175  
 <211> 70  
 <212> PRT  
 <213> B.fragilis

<400> 8175

Val	Ile	Arg	Lys	Thr	Ile	Lys	Lys	Thr	Thr	Val	Asn	Thr	Asn	Gln	Arg
1				5					10					15	



Glu Lys Tyr Phe Ser Asn Asp Val Ala Gly Val Ile Arg Thr Glu Ser  
 20 25 30  
 Arg Pro Val Phe Asp Phe Ile Leu Ser Ile Val Asn Glu Ala Leu Lys  
 35 40 45  
 Gln Pro Asn Thr Gln Ser Pro His Ile Lys Ile Thr Arg Leu Asn Ser  
 50 55 60  
 Gln Val Leu Ser Val Ser  
 65 70

<210> 8176  
 <211> 798  
 <212> PRT  
 <213> B.fragilis

<400> 8176

Leu Tyr Met Lys Lys Leu Leu Cys Leu Ile Ile Leu Leu Phe Ser Phe  
 1 5 10 15  
 Ile Arg Ser Glu Ala Gln Ser Asp His Ile Cys Pro His Glu Lys Leu  
 20 25 30  
 Tyr Val His Thr Asp Arg Ala Asn Tyr Glu Arg Gly Asp Thr Val Arg  
 35 40 45  
 Phe Arg Ala Tyr Leu Met Asp Thr Arg His Glu Ala Thr Ala Tyr Ser  
 50 55 60  
 Arg Tyr Val Tyr Ala Glu Leu Leu Ala Asp Ser Gln Val Ile Ser Arg  
 65 70 75 80  
 Glu Met Val Lys Asp Asp His Gly Val Phe Ser Gly Tyr Leu Ser Leu  
 85 90 95  
 Gly Asp Thr Leu Arg Ser Gly Asn Tyr Thr Leu Arg Phe Tyr Thr Arg  
 100 105 110  
 Tyr Leu Ser Ser Leu Pro Ala Pro Arg Tyr Phe Tyr Arg Gln Ile Ile  
 115 120 125  
 Val Gly Gly Arg Pro Phe Gln Asp Tyr Arg Lys Glu Ser Val Thr Arg  
 130 135 140  
 Met Ala Ala Ser Tyr His Val Ser Phe Phe Pro Glu Gly Gly Arg Leu  
 145 150 155 160  
 Pro Ser Gly Cys Val Ser Arg Val Ala Phe Lys Ala Leu Ser Pro Asp  
 165 170 175  
 Gly Leu Gly Thr Asp Val Gln Gly Phe Val Val Asn Gln Arg Gly Asp  
 180 185 190  
 Thr Val Thr Thr Leu Arg Ser Val His Arg Gly Met Gly Phe Phe Asn  
 195 200 205  
 Leu Glu Pro Val Ser Gly Asp Ser Tyr Thr Ala Val Cys Arg Asn Arg  
 210 215 220  
 Glu Gly Met Glu Leu Arg Phe Pro Leu Pro Pro Ala Asp Pro Ser Ala  
 225 230 235 240  
 Val Ser Leu Arg Val Asp Val Arg Lys Asp Asp Phe Leu Val Arg Leu  
 245 250 255  
 Asn Ser Gly Val Ser Pro Ser Pro Gly His Ser Leu Arg Val Glu Tyr  
 260 265 270  
 Arg Asp Ser Ile Leu Leu His Ala Ala Phe Ser Gly Ser Arg Pro Leu  
 275 280 285  
 Arg Leu Pro Arg Ser Pro Leu Pro Pro Gly Val Leu Arg Phe Val Leu  
 290 295 300  
 Leu Asp Gly Ser Gly Val Pro Ile Ser Gly Arg Thr Ala Phe Asn Gln  
 305 310 315 320  
 Ser Ser Ser Val Cys Ala Asp Val Asp Phe Ser Ala Arg Leu Lys Glu  
 325 330 335  
 Glu Lys Gly Arg Ser Phe Trp Asp Val Ser Leu Gly Leu Arg Asp Ser  
 340 345 350

Ser Gly Glu Pro Leu Gly Gly Thr Leu Ser Val Ser Val Thr Asp Asp  
 355 360 365  
 Arg Tyr Ala Leu Gln Asp Thr Thr Val Asn Ile Leu Ser Ser Phe Leu  
 370 375 380  
 Leu Ser Ser Asp Leu Gln Gly Tyr Val Glu Ala Pro Ser Phe Tyr Phe  
 385 390 395 400  
 Ser Gly Asp Asp Ser Arg Thr Ser Tyr Leu Leu Asp Leu Leu Met Leu  
 405 410 415  
 Thr Gln Gly Trp Val Lys Tyr Ser Phe Val Pro Asp Tyr Gly Ser Phe  
 420 425 430  
 Pro Val Glu Arg Ser Gln Cys Val Ser Gly Lys Val Val Ser Glu Tyr  
 435 440 445  
 Ser Glu Lys Lys Cys Ile Ala Asp Ala Val Val Thr Leu Phe Ser Phe  
 450 455 460  
 Asp Lys Lys Ile Met Arg Gln Thr Thr Ser Asp Ala Ser Gly Cys Phe  
 465 470 475 480  
 Arg Phe Asp Ser Leu Ser Phe Pro Arg Gly Thr His Phe Ile Leu Gln  
 485 490 495  
 Ala Arg Lys Lys Lys Gly Gly Thr Asp Val Ala Leu Leu Val Asp Arg  
 500 505 510  
 Asp Ser Val Pro Ser Val His Ser Ser Leu Pro Val Tyr Ala Asp Trp  
 515 520 525  
 Phe Arg Ala Glu Met Asp Glu Pro Val Val Ser Glu Gln Ser Gly Asn  
 530 535 540  
 Asp Pro Ser Pro Thr Ser Ala Asn Val Phe Gln Arg Ser Ser Thr Val  
 545 550 555 560  
 Pro Phe Ser Met Glu Gln Tyr Leu Asp Glu Val Val Val Ser Thr Lys  
 565 570 575  
 Lys Ile Glu Lys Lys Lys Arg Tyr Ala Ile Glu Ser Leu Met Ala His  
 580 585 590  
 Ser Asp Trp Asn Lys Thr Tyr His Val Asp Glu Met Thr Leu Ser Pro  
 595 600 605  
 Tyr Ser Ser Thr Lys Asp Leu Leu Ile Asn Thr Pro Gly Val Gly Trp  
 610 615 620  
 Ala Val Asp Ser Asn Ser Gly Asp Phe Phe Tyr Ile Thr Arg Leu Arg  
 625 630 635 640  
 Ala Gly Gly Ser Ser Thr Pro Pro Pro Ala Leu Leu Met Val Asp Gly  
 645 650 655  
 Leu Glu Thr Ser Tyr Ser Glu Leu Val Gly Ile Pro Val Ser Ile Val  
 660 665 670  
 Glu Ser Ile Glu Leu Val Lys Asp Ala Ala Gln Met Ala Tyr Ile Gly  
 675 680 685  
 Ser Lys Ala Ser Asn Gly Ala Ile Leu Ile Ser Thr Lys Ser Gly Leu  
 690 695 700  
 Gly Thr Val Gly Lys Lys Ala Ser Asn Phe Arg Ile Ile Arg Pro Ile  
 705 710 715 720  
 Gly Tyr Gln Val Lys Arg Glu Ser Tyr Ser Pro Ser Tyr Pro Val Val  
 725 730 735  
 Tyr Gly Ala Ile Asn Asn Gly Gly Asn Ser Phe Arg Thr Ile Tyr Trp  
 740 745 750  
 Ser Pro Asp Leu Leu Leu Asp Lys Ala Ala Ser His Leu Glu Phe Gly  
 755 760 765  
 Asn Pro Lys Gln Gly Arg Leu Thr Leu Val Val Gln Gly Ile Thr Pro  
 770 775 780  
 Asp Gly Lys Leu Ile Asn Leu Thr Arg Thr Leu Gly Asn Glu  
 785 790 795

&lt;210&gt; 8177

&lt;211&gt; 479

[illegible]

<400> 8177

Ile 1	Thr	Met	Lys	Arg 5	Phe	Gln	Leu	Phe	Leu 10	Val	Gly	Ala	Phe	Val 15	Ala
Ala	Gly	Pro	Leu 20	Phe	Ala	Gln	Ser	Ala 25	Asp	Ala	Asp	Trp	His 30	Ser	Glu
Val	Ala	Lys 35	Val	Lys	Glu	Leu	Ile 40	Gln	Thr	Asn	Pro	Ala 45	Gln	Ala	Ser
Glu	Glu 50	Ala	Ala	Gln	Leu	Leu 55	Lys	Gly	Lys	Asn 60	Lys	Lys	Asn	Thr	Asp
Leu 65	Leu	Ile	Ala	Ile	Gly 70	Gln	Ala	Tyr	Leu	Glu 75	Ala	Gly	Lys	Ile	Asn 80
Glu	Ala	Glu	Ala	Tyr 85	Ala	Ala	Leu	Gly	Gln 90	Lys	Ala	Asn	Ser	Lys 95	Ser
Ala	Ala	Val	Ser 100	Val	Leu	Gln	Gly	Asp 105	Ile	Ala	Val	Ala 110	Lys	Lys	Asp
Ala	Gly	Lys 115	Ala	Cys	Gln	Leu	Tyr 120	Glu	Gln	Ala	Ile	Tyr 125	Phe	Asp	Pro
Asn	Tyr 130	Lys	Glu	Ala	Tyr	Leu 135	Lys	Phe	Ala	Asp	Val 140	Tyr	Lys	Gly	Ala
Ser 145	Pro	Gln	Leu	Ala	Ile 150	Glu	Lys	Leu	Glu	Gln 155	Leu	Lys	Asn	Leu	Asp 160
Pro	Ser	Cys	Val	Ala 165	Ala	Asp	Lys	Lys	Leu 170	Ala	Glu	Val	Tyr	Tyr 175	Leu
Asn	Asn	Lys	Phe 180	Asp	Lys	Ala	Ala	Glu 185	Ala	Tyr	Ala	His 190	Phe	Ile	Asn
Thr	Pro 195	Glu	Ala	Thr	Glu	Asp	Asp 200	Leu	Thr	Lys	Tyr	Ser 205	Phe	Ala	Leu
Phe 210	Leu	Asn	His	Asp	Phe	Glu 215	Lys	Ser	Leu	Gln	Ile 220	Ala	Leu	Met	Gly
Leu 225	Gln	Lys	Asn	Pro	Arg 230	Asp	Ala	Ala	Phe	Asn 235	Arg	Leu	Ala	Met	Tyr 240
Asn	Tyr	Thr	Asp 245	Leu	Lys	Arg	Tyr	Asp 250	Glu	Ala	Met	Lys	Ala	Ala 255	Asp
Ala	Phe	Phe	Lys 260	Glu	Ser	Asp	Lys	Ala 265	Asp	Phe	Ser	Tyr 270	Leu	Asp	Tyr
Met	Tyr 275	Phe	Gly	His	Leu	Leu	Asn 280	Ala	Val	Lys	Lys	Tyr 285	Asp	Gln	Ala
Val	Glu 290	Ala	Tyr	Met	Lys	Ala 295	Ile	Thr	Leu	Asp 300	Pro	Ala	Lys	Thr	Asp
Leu 305	Trp	Arg	Glu	Val	Ser 310	Ser	Ser	Tyr	Glu	Leu 315	Asn	Asn	Glu	Phe	Thr 320
Lys	Ala	Ile	Glu 325	Ala	Tyr	Lys	Lys	Tyr	Ser 330	Glu	Ser	Leu	Ser	Ala 335	Asp
Lys	Arg	Thr	Pro 340	Asp	Val	Gln	Phe	Gln 345	Ile	Gly	Lys	Leu 350	Tyr	Tyr	Glu
Lys	Gly 355	Thr	Gln	Ser	Asp	Thr	Leu 360	Thr	Val	Ser	Leu	Asp 365	Glu	Arg	Lys
Ala	Ala 370	Leu	Val	Ser	Ala	Asp 375	Ser	Ile	Phe	Thr	Glu 380	Ile	Ala	Lys	Val
Ala 385	Pro	Asp	Ser	Tyr	Leu 390	Gly	Asn	Phe	Trp	Arg 395	Ala	Arg	Thr	Asn	Ser 400
Ala	Leu	Asp	Pro 405	Glu	Thr	Thr	Gln	Gly	Leu 410	Ala	Lys	Pro	Tyr	Tyr	Glu
Glu	Val	Ala	Ala 420	Phe	Leu	Ile	Asp 425	Lys	Asn	Asp	Pro	Arg	Tyr 430	Asn	Ser
Ala	Leu	Ile	Glu	Cys	Tyr	Ser	Tyr	Leu	Gly	Tyr	Tyr	Tyr	Leu	Val	Ala

435                      440                      445  
 Asn Lys Leu Pro Glu Ser Lys Glu Tyr Trp Asn Lys Ile Leu Ala Ile  
 450                      455                      460  
 Asp Pro Ala Asn Ala Thr Ala Lys Arg Ala Leu Asp Gly Ile Lys  
 465                      470                      475

<210> 8178  
 <211> 187  
 <212> PRT  
 <213> B.fragilis

<400> 8178  
 Gly Ala Cys Asp Cys Lys Asn Trp Ser Glu Arg Ala Lys Arg Val Gly  
 1                      5                      10                      15  
 Thr Lys Glu Phe Gly Ala Met Ile Ile Asn Tyr Ile His Arg Val Gly  
 20                      25                      30  
 Trp Phe Val Gly Leu Ile Leu Leu Gln Val Leu Ile Leu Asn Asn Val  
 35                      40                      45  
 His Ile Ala Gly Val Ala Thr Pro Phe Leu Tyr Val Tyr Phe Ile Leu  
 50                      55                      60  
 Lys Phe Asn Ser Gly Thr Ser Arg Asn Glu Leu Met Val Trp Gly Phe  
 65                      70                      75                      80  
 Cys Met Gly Leu Ala Ile Asp Ile Phe Ser Asn Thr Pro Gly Met Asn  
 85                      90                      95  
 Ala Ala Ala Thr Val Leu Leu Ala Phe Leu Arg Pro Leu Phe Leu Arg  
 100                      105                      110  
 Leu Phe Thr Pro Arg Asp Thr Leu Asp Ser Ile Val Pro Ser Leu Lys  
 115                      120                      125  
 Ser Met Gly Ile Ala Ser Phe Leu Lys Tyr Leu Val Val Ser Val Phe  
 130                      135                      140  
 Val His His Phe Met Leu Leu Thr Leu Glu Phe Phe Ser Phe Thr Ser  
 145                      150                      155                      160  
 Ile Pro Leu Leu Leu Leu Arg Val Val Ser Ser Thr Ile Leu Thr Ile  
 165                      170                      175  
 Thr Cys Ile Met Ala Val Glu Gly Val Arg Arg  
 180                      185

<210> 8179  
 <211> 102  
 <212> PRT  
 <213> B.fragilis

<400> 8179  
 Arg Val Ser Phe Ile Val Val Ala Met Phe Met Phe Val Cys Asp Gly  
 1                      5                      10                      15  
 Phe Asn Leu Asp Leu Asn Met Lys Leu Lys Thr Asp Asn Gln Asn Phe  
 20                      25                      30  
 Asn Lys Lys Ile Ile Met Lys Lys Leu Val Leu Val Val Ala Met Phe  
 35                      40                      45  
 Met Phe Ala Cys Gly Ser Phe Phe Thr Met Ala Gln Asp Pro Val Lys  
 50                      55                      60  
 Lys Asp Pro Lys Lys Glu Val Lys Asp Thr Ala Lys Thr Glu Pro Lys  
 65                      70                      75                      80  
 Lys Glu Val Ala Asp Thr Thr Ala Ile Thr Val Ala Ala Ser Gly Ala  
 85                      90                      95  
 Phe Ala Gln Phe Ala Glu  
 100

<210> 8180

<211> 65  
 <212> PRT  
 <213> B.fragilis

<400> 8180

Asn	Tyr	Thr	Glu	Ser	Thr	Ser	Lys	Glu	His	Gln	Gly	Val	Glu	Tyr	Phe
1				5					10					15	
His	Thr	Leu	Phe	His	Ile	Phe	His	Asn	Ile	Pro	His	Cys	Ile	Pro	Phe
		20						25					30		
Pro	Phe	Ile	Phe	Tyr	Ser	Pro	Thr	Asn	Gln	Gln	Ile	Ser	Ser	His	Val
		35					40					45			
Phe	Phe	Leu	Ala	Gln	Asp	Leu	Gly	Asn	Thr	Gln	Tyr	Lys	Cys	Leu	Thr
	50					55					60				

Lys  
65

<210> 8181

<211> 364  
 <212> PRT  
 <213> B.fragilis

<400> 8181

Arg	Ser	Glu	Glu	Ile	Gly	Met	Ala	Lys	Asp	Tyr	Val	Leu	Glu	Lys	Arg
1				5					10					15	
Lys	Tyr	Val	Ile	Gly	Gly	Val	Ala	Leu	Ala	Ile	Val	Leu	Ile	Tyr	Leu
		20						25					30		
Leu	Arg	Leu	Phe	Ser	Leu	Gln	Ile	Ala	Thr	Asp	Asp	Tyr	Lys	Lys	Asn
		35					40					45			
Ala	Asp	Ser	Asn	Ala	Phe	Leu	Asn	Lys	Ile	Gln	Tyr	Pro	Ser	Arg	Gly
	50					55					60				
Ala	Met	Tyr	Asp	Arg	Asn	Asp	Lys	Leu	Leu	Val	Phe	Asn	Gln	Pro	Ala
65					70					75				80	
Tyr	Asp	Ile	Thr	Met	Val	Pro	Lys	Glu	Val	Glu	Asn	Leu	Asp	Thr	Leu
				85					90					95	
Asp	Leu	Cys	Gln	Thr	Leu	Asn	Ile	Thr	Arg	Ala	Gln	Phe	Leu	Lys	Ile
			100					105					110		
Met	Ser	Asp	Met	Lys	Asp	Arg	Arg	Arg	Asn	Pro	Gly	Tyr	Ser	Arg	Tyr
		115					120					125			
Thr	Asn	Gln	Val	Phe	Met	Ser	Gln	Leu	Ser	Ala	Glu	Glu	Cys	Gly	Val
							135					140			
Phe	Gln	Glu	Lys	Leu	Phe	Lys	Phe	His	Gly	Phe	Tyr	Ile	Gln	Arg	Arg
145					150					155				160	
Thr	Ile	Arg	Gln	Tyr	Ser	Tyr	Asn	Ser	Ala	Ala	His	Val	Leu	Gly	Asp
				165					170					175	
Ile	Gly	Glu	Val	Ser	Met	Lys	Asp	Ile	Glu	Asn	Asp	Asp	Tyr	Tyr	Ile
			180						185				190		
Arg	Gly	Asp	Tyr	Ile	Gly	Lys	Gln	Gly	Ile	Glu	Lys	Ser	Tyr	Glu	Ser
		195					200						205		
Tyr	Leu	Arg	Gly	Glu	Lys	Gly	Val	Glu	Val	Leu	Leu	Arg	Asp	Ala	His
		210				215					220				
Gly	Arg	Ile	Gln	Gly	His	Tyr	Met	Asp	Gly	Lys	Tyr	Asp	Lys	Arg	Pro
225					230					235				240	
Ile	Pro	Gly	Lys	Asn	Leu	Lys	Leu	Gly	Ile	Asp	Ile	Asp	Leu	Gln	Met
			245						250					255	
Leu	Gly	Glu	Arg	Leu	Leu	Lys	Asn	Lys	Ile	Gly	Ser	Ile	Val	Ala	Ile
		260						265					270		
Glu	Pro	Glu	Thr	Gly	Glu	Ile	Leu	Cys	Met	Val	Ser	Ser	Pro	Asp	Phe
		275					280					285			

Asp Pro Arg Leu Met Ile Gly Arg Gln Arg Gly Lys Asn His Leu Met

290	295	300
Leu Gln Arg Asp Pro Met Lys Pro Leu Leu Asn Arg Ser Ile Met Gly		
305	310	315
Val Tyr Pro Pro Gly Ser Thr Phe Lys Thr Ala Gln Ala Leu Thr Phe		
	325	330
Leu Gln Glu Gly Ile Ile Gln Thr Asn Thr Pro Ala Phe Pro Cys Gly		
	340	345
Leu His His Arg Ala Glu Gly Ser Ser Gly Gly Leu		
	355	360

<210> 8182  
 <211> 60  
 <212> PRT  
 <213> B.fragilis

<400> 8182
Ala His Gly Phe Arg Asp Tyr Phe Thr Leu Leu Phe Glu Val Leu Phe
1 5 10 15
Thr Phe Pro Ser Gln Tyr Trp Phe Ala Ile Gly Leu Ser Gly Val Phe
20 25 30
Ser Leu Thr Gly Trp Ser Arg Leu Ile His Ala Glu Phe Leu Val Leu
35 40 45
Arg Ala Thr Gln Asp Thr Thr Thr Leu Arg Leu Pro
50 55 60

<210> 8183  
 <211> 290  
 <212> PRT  
 <213> B.fragilis

<400> 8183
Ile Val Val Cys Asn Leu Tyr Val Phe Met Arg Asn Leu Leu Asn Phe
1 5 10 15
Leu Leu Lys Tyr Asn His Trp Phe Leu Phe Ile Leu Leu Glu Val Ile
20 25 30
Ser Phe Val Leu Leu Phe Arg Phe Asn His Tyr Gln His Ser Val Tyr
35 40 45
Phe Ser Ser Ala Asn Val Val Ala Gly Lys Val Tyr Glu Val Ser Gly
50 55 60
Gly Ile Thr Ser Tyr Phe His Leu Lys Ser Val Asn Glu Asp Leu Leu
65 70 75 80
Asp Arg Ile Met Glu Leu Glu Gln Gln Asn Arg Asn Leu Glu Asn Ala
85 90 95
Leu Val Lys His Leu Ser Asp Ser Thr Glu Leu Asn Ser Ile Arg Asn
100 105 110
Leu Ser Asp Thr Asp Tyr Glu Ile Phe Lys Ala Arg Val Ile Asn Asn
115 120 125
Ser Leu Asn Leu Val Asp Asn Tyr Ile Thr Leu Asn Arg Gly Ser Lys
130 135 140
Asp Gly Ile Arg Pro Glu Met Gly Val Val Asp Gly Asn Gly Val Val
145 150 155 160
Gly Ile Val Tyr Glu Thr Ser Ser His Tyr Ser Arg Val Ile Ser Val
165 170 175
Leu Asn Ser Lys Ser Ser Ile Ser Cys Lys Ile Val Gly Ser Glu Tyr
180 185 190
Phe Gly Tyr Leu Lys Trp Glu Tyr Gly Asp Ala Arg Tyr Ala Tyr Leu
195 200 205
Lys Asp Leu Pro Arg His Ala Glu Phe Asn Leu Gly Asp Thr Val Val
210 215 220

Thr Ser Gly Tyr Ser Thr Val Phe Pro Glu Gly Ile Met Ile Gly Thr  
 225 230 235 240  
 Val Asp Asp Met Ala Asp Ser Asn Asp Gly Leu Ser Tyr Leu Leu Lys  
 245 250 255  
 Val Lys Leu Ala Thr Asp Phe Gly Lys Val Ser Glu Val Arg Val Ile  
 260 265 270  
 Ala Arg Thr Gly Gln Arg Glu Gln Lys Glu Leu Glu Gln Lys Ser Leu  
 275 280 285  
 Ala Gln  
 290

&lt;210&gt; 8184

&lt;211&gt; 681

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8184

Phe Ile Lys Cys Met Lys Val Ile Lys Tyr Leu Pro Ile Leu Ala Ile  
 1 5 10 15  
 Cys Cys Met Ala Thr Gly Cys Asn Ser Lys Lys Glu Ala Val Leu Thr  
 20 25 30  
 Ser Gly Ile Asp Leu Ala Asn Leu Asp Thr Thr Ala Leu Pro Gly Thr  
 35 40 45  
 Ser Phe Tyr Gln Tyr Ala Cys Gly Gly Trp Met Lys Asn His Pro Leu  
 50 55 60  
 Thr Asp Glu Tyr Ser Arg Phe Gly Ser Phe Asp Met Leu Ala Glu Asn  
 65 70 75 80  
 Asn Arg Gln Gln Leu Arg Gly Leu Ile Glu Gly Leu Ala Ala Glu Lys  
 85 90 95  
 His Glu Ala Gly Ser Ile Ala Gln Lys Val Gly Glu Leu Tyr Asn Ile  
 100 105 110  
 Ala Met Asp Ser Val Lys Leu Asn Lys Glu Gly Ala Ala Pro Ile Lys  
 115 120 125  
 Pro Glu Leu Glu Lys Ile Gly Ala Ile Lys Asp Lys Ala Glu Ile Tyr  
 130 135 140  
 Pro Leu Ile Val Glu Met Gln Lys Arg Gly Met Tyr Pro Tyr Phe Ile  
 145 150 155 160  
 Leu Tyr Val Ser Ala Asp Asp Met Asn Ser Asn Glu Asn Met Val His  
 165 170 175  
 Thr Met Gln Gly Gly Leu Gly Met Gly Glu Arg Asp Tyr Tyr Leu Glu  
 180 185 190  
 Asp Asp Ala Gln Thr Lys Glu Ile Arg Asp Lys Tyr Gln Gln His Val  
 195 200 205  
 Ser Lys Met Phe Gln Leu Ala Gly Tyr Asp Glu Ala Thr Ala Arg Lys  
 210 215 220  
 Ala Val Lys Ala Val Met Asn Ile Glu Thr Arg Leu Ala Gln Ser Ala  
 225 230 235 240  
 Arg Ser Gln Val Glu Leu Arg Asp Pro His Ala Asn Tyr Asn Lys Lys  
 245 250 255  
 Thr Leu Glu Glu Leu Gln Lys Glu Tyr Pro Ser Phe Ala Trp Asp Val  
 260 265 270  
 Phe Phe Ser Thr Ala Gly Leu Asn Asn Leu Lys Glu Val Asn Ile Gly  
 275 280 285  
 Gln Pro Asp Ala Leu Lys Glu Val Asn Ala Ile Ile Asp Thr Val Ser  
 290 295 300  
 Leu Ala Asp Gln Asn Tyr Cys Leu Gln Trp Asn Leu Ile Asn Ser Ala  
 305 310 315 320  
 Ala Asn Tyr Leu Ser Asp Asp Phe Ile Ala Gln Asp Phe Asp Phe Tyr  
 325 330 335

Gly Arg Thr Met Ser Gly Lys Lys Glu Met Gln Pro Arg Trp Lys Arg  
 340 345 350  
 Ala Val Ser Thr Val Asp Gly Ser Leu Gly Glu Ala Val Gly Gln Met  
 355 360 365  
 Tyr Val Glu Lys Tyr Phe Pro Ala Ala Lys Glu Arg Met Val Ala  
 370 375 380  
 Leu Val Lys Asn Leu Gln Glu Ser Leu Gly Glu Arg Ile Lys Gly Leu  
 385 390 395 400  
 Ser Trp Met Gly Glu Glu Thr Lys Glu Lys Ala Leu Glu Lys Leu Ala  
 405 410 415  
 Thr Phe His Val Lys Ile Gly Tyr Pro Asp Lys Trp Lys Asp Tyr Ser  
 420 425 430  
 Ser Leu Glu Ile Lys Asp Asp Ser Tyr Trp Ala Asn Ile Glu Arg Ala  
 435 440 445  
 Asn Gln Trp Ser Tyr Asn Glu Met Ile Gly Lys Tyr Gly Lys Pro Val  
 450 455 460  
 Asp Lys Asp Glu Trp Tyr Met Thr Pro Gln Thr Val Asn Ala Tyr Tyr  
 465 470 475 480  
 Asn Pro Thr Thr Asn Glu Ile Cys Phe Pro Ala Gly Ile Leu Gln Tyr  
 485 490 495  
 Pro Phe Phe Asp Met Asn Ala Asp Asp Ala Phe Asn Tyr Gly Ala Ile  
 500 505 510  
 Gly Val Val Ile Gly His Glu Met Thr His Gly Phe Asp Asp Gln Gly  
 515 520 525  
 Arg Gln Tyr Asp Lys Asp Gly Asn Leu Lys Asp Trp Trp Thr Ala Glu  
 530 535 540  
 Asp Ala Lys Asn Phe Glu Ala Arg Ala Val Met Ala Asn Phe Phe  
 545 550 555 560  
 Asp Ser Ile Glu Val Ala Pro Gly Val His Ala Asn Gly Glu Phe Thr  
 565 570 575  
 Leu Gly Glu Asn Ile Ala Asp His Gly Gly Leu Gln Val Ser Tyr Gln  
 580 585 590  
 Ala Phe Lys Lys Ala Thr Ala Ala Ala Pro Leu Lys Ile Glu Asn Gly  
 595 600 605  
 Phe Thr Pro Glu Gln Arg Phe Phe Leu Ser Tyr Ala Asn Val Trp Ala  
 610 615 620  
 Gly Asn Ile Arg Pro Glu Glu Ile Leu Lys Arg Thr Lys Thr Asp Pro  
 625 630 635 640  
 His Ser Leu Gly Lys Trp Arg Val Asp Gly Ala Leu Pro Gln Ile Gly  
 645 650 655  
 Ala Trp Tyr Glu Ala Phe Asn Ile Thr Glu Lys Asp Pro Met Tyr Leu  
 660 665 670  
 Pro Val Asp Lys Arg Val Ser Ile Trp  
 675 680

&lt;210&gt; 8185

&lt;211&gt; 422

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8185

Ile Asn Met Leu Gln Ile Asn Arg His Ile Leu Asp Asn Gly Leu Arg  
 1 5 10 15  
 Leu Val His Ala Gln Asp Thr Ser Thr Gln Met Val Ala Leu Asn Ile  
 20 25 30  
 Leu Tyr Asn Val Gly Ala Arg Asp Glu Asn Pro Glu His Thr Gly Phe  
 35 40 45  
 Ala His Leu Phe Glu His Leu Met Phe Gly Gly Ser Val Asn Ile Pro  
 50 55 60



Asp Tyr Asp Ala Pro Leu Gln Leu Ala Gly Gly Glu Asn Asn Ala Trp  
 65 70 75 80  
 Thr Asn Asn Asp Ile Thr Asn Tyr Tyr Leu Thr Val Pro Arg Gln Asn  
 85 90 95  
 Val Glu Thr Gly Phe Trp Leu Glu Ser Asp Arg Met Leu Ser Leu Asp  
 100 105 110  
 Phe Ser Glu Arg Ser Leu Glu Val Gln Arg Gly Val Val Met Glu Glu  
 115 120 125  
 Phe Lys Gln Arg Cys Leu Asn Gln Pro Tyr Gly Asp Val Gly His Leu  
 130 135 140  
 Leu Arg Pro Leu Ala Tyr Arg Val His Pro Tyr Gln Trp Pro Thr Ile  
 145 150 155 160  
 Gly Lys Glu Leu Ser His Ile Ala Asn Ala Thr Leu Glu Glu Val Lys  
 165 170 175  
 Asp Phe Phe Phe Arg Phe Tyr Ala Pro Asn Asn Ala Val Leu Ala Val  
 180 185 190  
 Thr Gly Asn Ile Ser Phe Glu Glu Ala Leu His Leu Thr Glu Lys Trp  
 195 200 205  
 Phe Gly Pro Ile Pro Arg Arg Glu Val Pro Leu Arg Gln Leu Pro Pro  
 210 215 220  
 Glu Pro Val Gln Thr Glu Glu Arg Arg Leu Val Val Glu Arg Asn Val  
 225 230 235 240  
 Pro Leu Asp Ser Leu Phe Met Ala Tyr His Met Cys Asp Arg Ala Asp  
 245 250 255  
 Ser Asp Tyr Tyr Ala Phe Asp Ile Leu Ser Asp Ile Leu Ser Asn Gly  
 260 265 270  
 Arg Ser Ser Arg Leu Asn Gln His Leu Val Gln Glu Lys Gln Leu Phe  
 275 280 285  
 Ser Ser Ile Asp Ala Tyr Ile Ser Gly Thr Leu Asp Ala Gly Leu Phe  
 290 295 300  
 His Ile Ser Gly Lys Pro Ala Ala Gly Val Ser Leu Glu Glu Ala Glu  
 305 310 315 320  
 Ala Ala Val Arg Glu Glu Leu Asn Glu Leu Gln Ser Ala Leu Ile Gln  
 325 330 335  
 Glu Gln Glu Leu Glu Lys Val Lys Asn Lys Phe Glu Ser Thr Gln Ile  
 340 345 350  
 Phe Gly Asn Ile Asn Tyr Leu Asn Val Ala Thr Asn Leu Ala Trp Phe  
 355 360 365  
 Glu Leu Asn Gly Arg Ala Glu Asp Met Glu Lys Glu Val Glu Arg Tyr  
 370 375 380  
 Arg Ala Val Thr Ala Asp Arg Leu Asn Ala Val Ala Gln Thr Ala Phe  
 385 390 395 400  
 Arg Glu Glu Asn Gly Val Val Leu Tyr Tyr Lys Ser Ser Arg Gly Glu  
 405 410 415  
 Lys Asp Glu Thr Tyr Ile  
 420

&lt;210&gt; 8186

&lt;211&gt; 85

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8186

His Tyr His Arg His Ser Thr Ile His Gln Arg Asn Thr Lys Gln Ile  
 1 5 10 15  
 Gly Leu Pro Ile Leu His His Leu Phe Thr Ala Lys Ile His Lys Thr  
 20 25 30  
 Arg Leu Thr Glu Lys Ser Ile Ser Tyr His Asn Ser Ile Cys Leu Glu  
 35 40 45

Trp Asn Asn Ala Glu Ile Leu Ser Gly Thr Ala Lys Val Ala Leu Asn  
 50 55 60  
 Asn Asn Ser Arg Leu Ile Ser Glu Ser Ser Pro Asp Ser Leu Gly Lys  
 65 70 75 80  
 Ser Lys Lys Leu Pro  
 85

<210> 8187  
 <211> 252  
 <212> PRT  
 <213> B.fragilis

<400> 8187  
 Phe Lys Phe Ser Met Gly Leu Leu Asp Gly Lys Thr Ala Ile Val Thr  
 1 5 10 15  
 Gly Ala Ala Arg Gly Ile Gly Lys Ala Ile Ala Leu Lys Phe Ala Ser  
 20 25 30  
 Glu Gly Ala Asn Ile Ala Phe Thr Asp Leu Val Ile Asp Glu Asn Ala  
 35 40 45  
 Gln Asn Thr Ala Lys Glu Ile Glu Ala Met Gly Val Lys Ala Lys Gly  
 50 55 60  
 Tyr Ala Ser Asn Ala Ala Asn Phe Glu Asp Thr Ala Lys Val Val Glu  
 65 70 75 80  
 Glu Ile His Lys Asp Phe Gly Arg Ile Asp Ile Leu Val Asn Asn Ala  
 85 90 95  
 Gly Ile Thr Arg Asp Gly Leu Met Met Arg Met Ser Glu Gln Gln Trp  
 100 105 110  
 Asp Met Val Ile Asn Val Asn Leu Lys Ser Ala Phe Asn Phe Val His  
 115 120 125  
 Ala Cys Thr Pro Ile Met Met Arg Gln Lys Ala Gly Ser Ile Ile Asn  
 130 135 140  
 Met Ala Ser Val Val Gly Val His Gly Asn Ala Gly Gln Ala Asn Tyr  
 145 150 155 160  
 Ser Ala Ser Lys Ala Gly Met Ile Gly Leu Ala Lys Ser Ile Ala Gln  
 165 170 175  
 Glu Leu Gly Ser Arg Gly Ile Arg Ala Asn Ala Ile Ala Pro Gly Phe  
 180 185 190  
 Ile Ile Thr Asp Met Thr Ala Gly Leu Ser Glu Glu Val Lys Thr Glu  
 195 200 205  
 Trp Ala Lys Lys Ile Pro Leu Arg Arg Gly Gly Thr Pro Glu Asp Val  
 210 215 220  
 Ala Asn Ile Ala Thr Phe Leu Ala Ser Asp Met Ser Ser Tyr Val Ser  
 225 230 235 240  
 Gly Gln Val Ile Gln Val Asp Gly Gly Met Asn Met  
 245 250

<210> 8188  
 <211> 88  
 <212> PRT  
 <213> B.fragilis

<400> 8188  
 Ser Leu Pro Arg Ala His Ile Asp Gly Gly Val Trp His Leu Asp Val  
 1 5 10 15  
 Gly Ser Ser His Pro Gly Ala Gly Glu Gly Pro Lys Gly Trp Ala Val  
 20 25 30  
 Arg Pro Leu Lys Trp His Ala Ser Trp Val Gln Asn Val Val Arg Gln  
 35 40 45  
 Phe Gly Leu Tyr Leu Ser Trp Ala Tyr Glu Ile Cys Val Ala Leu Thr

50                      55                      60  
 Leu Val Arg Glu Asp Arg Val Gly Leu Thr Ser Gly Leu Pro Val Val  
 65                      70                      75                      80  
 Pro Pro Gly Ala Leu Pro Gly Ile  
                          85

<210> 8189  
 <211> 462  
 <212> PRT  
 <213> B.fragilis

<400> 8189  
 Leu Lys Glu Gly Cys Ser Arg Glu Tyr Phe Ser Phe Leu Ala Ala Ser  
 1                      5                      10                      15  
 Phe Phe Ser Tyr Leu Lys Leu Lys Ala Met Lys Asn Phe Arg Val Ala  
                          20                      25                      30  
 Ile Arg Arg Ser Tyr Leu Ser Val Ile Leu Leu Leu Leu Ala Leu Val  
                          35                      40                      45  
 Cys Tyr Leu Leu Tyr Pro Leu Glu Ile Pro Ala Leu Ser Ser Glu Ser  
                          50                      55                      60  
 Ala Ile Glu Ile Asp Arg Tyr Val His Ser Val Pro Cys Thr Val Gln  
 65                      70                      75                      80  
 Met Pro Asp Thr Ala Thr Asp Phe Leu Cys Phe Leu Asp Glu Glu Leu  
                          85                      90                      95  
 Lys Asn Lys Gln Ile Leu Leu Leu Gly Glu Gln Leu His Gln Asp Gly  
                          100                      105                      110  
 Ala Thr Leu Gln Met Lys Thr Arg Met Val Arg Tyr Leu His Glu Lys  
                          115                      120                      125  
 Leu Gly Tyr Asn Val Ile Leu Tyr Glu Thr Gly Leu Tyr Asp Met Tyr  
                          130                      135                      140  
 Leu Met Asn Gln Asp Gly Arg Gln Arg Met Asn Pro Ser Lys Ala Val  
 145                      150                      155                      160  
 Trp Thr Phe Trp Trp Gly Ser Asn Glu Thr Lys Ser Leu Trp Glu Tyr  
                          165                      170                      175  
 Tyr Arg Ser His Pro Ser Ile Ala Leu Asp Gly Phe Asp Cys Gln Leu  
                          180                      185                      190  
 Thr Asn Tyr Gly Gln Gly Arg Lys His Met Glu Ser Val Glu Lys Tyr  
                          195                      200                      205  
 Leu Asn Gly Tyr Ser Ser Ser Leu Ser Asp Phe Pro Tyr Val Gln Arg  
                          210                      215                      220  
 Phe Phe Leu Gln Met Ser Glu Phe Asn Gly Asn Trp Asn Tyr Phe Gly  
 225                      230                      235                      240  
 Tyr Arg Leu Asp Arg Met Leu Lys Asp Ser Ile Val Gln Asp Phe Asn  
                          245                      250                      255  
 Lys Leu Glu Asn Arg Ile His Glu Glu Ser Arg Tyr Ser Met Glu Asp  
                          260                      265                      270  
 Gly Leu His Gln Arg Tyr Ile Ala Gly Leu Lys Leu Arg Tyr Glu Ser  
                          275                      280                      285  
 Ile Trp Lys Tyr Arg Asn Val Gly Asp Leu Thr Arg Met Asn Leu Arg  
                          290                      295                      300  
 Asp Ser Ile Met Ala Asp Asn Leu Thr Trp Leu Val Asp Ser Val Tyr  
 305                      310                      315                      320  
 Lys Asp Gln Lys Val Ile Val Trp Cys Ala Asn Val His Val Phe Asn  
                          325                      330                      335  
 Arg Gly Arg Met Gln Val Asp Ser Thr Arg Phe Thr Ser Met Gly Gln  
                          340                      345                      350  
 Arg Leu Lys Ile His Phe Gly Asp Arg Met Tyr Thr Ile Ala Phe Thr  
                          355                      360                      365  
 Ser Tyr Ala Arg Arg Asn Thr Asp Gly Gly Ile Arg Asp Pro Leu Ser

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370	375	380
Thr Leu Ser Leu Glu Tyr	Leu Leu His Arg Arg	Lys Val Gly Phe Ala
385	390	395
Tyr Leu Asn Phe Asn Glu	Leu Pro Val Asp Ser Arg	Trp Arg Gln Ala
	405	410
Phe Ile Ser Gly Leu Asp	Gln Gly Ala Ser Leu Ser	Glu Val Trp Ser
	420	425
Glu Gln Met Asp Met Leu	Phe Tyr Ile Asp Leu Asn	Tyr Asp Val Tyr
	435	440
Tyr Asp Lys Thr Phe Ile	Asn Lys Met Tyr Lys	Trp Ala Lys
450	455	460

<210> 8190  
 <211> 200  
 <212> PRT  
 <213> B.fragilis

<400> 8190
Tyr Phe Ile Ile Arg Val Val Glu Glu Arg Arg Met Arg Leu Ile Tyr
1 5 10 15
Lys Asn His Tyr Lys Ala Leu Phe Leu Leu Gly Leu Pro Ile Val Ile
20 25 30
Gly Gln Val Gly Val Ile Val Leu Gly Phe Ala Asp Thr Leu Met Ile
35 40 45
Gly His His Ser Thr Asn Glu Leu Gly Ala Ala Ser Phe Val Asn Asn
50 55 60
Met Phe Thr Leu Ala Ile Phe Ser Thr Gly Phe Ser Tyr Gly Leu
65 70 75 80
Thr Pro Ile Val Gly Gly Phe Tyr Gly Thr Arg Arg Phe Ala Ser Ala
85 90 95
Gly Gln Ala Leu Arg Cys Ser Leu Leu Ala Asn Leu Leu Val Gly Ile
100 105 110
Leu Leu Thr Val Ile Met Gly Ile Leu Tyr Leu Asn Val Glu Arg Leu
115 120 125
Gly Gln Pro Glu Glu Leu Leu Pro Leu Ile Lys Pro Tyr Tyr Leu Ile
130 135 140
Leu Leu Ala Ser Leu Val Phe Val Leu Leu Phe Asn Gly Phe Lys Gln
145 150 155 160
Phe Thr Asp Gly Ile Thr Asp Thr Lys Thr Ala Met Trp Ile Leu Leu
165 170 175
Gly Gly Asn Val Leu Asn Leu Lys Ser Ala Thr Ile Ile Gln Tyr Thr
180 185 190
Ile Lys Gly Arg Phe Met Ser Arg
195 200

<210> 8191  
 <211> 243  
 <212> PRT  
 <213> B.fragilis

<400> 8191
Tyr Val Phe Leu Cys Ile Arg Ser Gly Asp Ser Gly Arg Trp Trp Tyr
1 5 10 15
Glu Tyr Val Ile Phe Gly Met Thr Val Ile Tyr Glu Asp Asn His Ile
20 25 30
Ile Val Val Asn Lys Thr Ala Ser Glu Ile Val Gln Gly Asp Lys Thr
35 40 45
Gly Asp Thr Pro Leu Ser Glu Thr Val Lys Gln Tyr Leu Lys Asp Lys
50 55 60

Tyr Gln Lys Pro Gly Asn Val Phe Ile Gly Val Thr His Arg Leu Asp  
 65 70 75 80  
 Arg Pro Val Ser Gly Leu Val Ile Phe Ala Lys Thr Ser Lys Ala Leu  
 85 90 95  
 Ser Arg Leu Asn Glu Met Phe Lys Asn Ser Glu Val Lys Lys Thr Tyr  
 100 105 110  
 Trp Ala Ile Val Lys Asn Cys Pro Lys Gln Pro Glu Gly Glu Leu Val  
 115 120 125  
 His Tyr Leu Val Arg Asn Glu Lys Gln Asn Lys Ser Tyr Ala Tyr Asp  
 130 135 140  
 Lys Glu Val Pro Asn Ser Lys Lys Ala Ile Leu Asn Tyr Lys Leu Ile  
 145 150 155 160  
 Gly His Ser Asp His Tyr Phe Leu Leu Glu Val Asp Leu Lys Thr Gly  
 165 170 175  
 Arg His His Gln Ile Arg Cys Gln Leu Ala Lys Met Gly Cys Pro Ile  
 180 185 190  
 Lys Gly Asp Leu Lys Tyr Gly Ser Ala Arg Ser Asn Pro Asp Gly Ser  
 195 200 205  
 Ile Cys Leu His Ala Arg His Val Arg Phe Val His Pro Val Ser Lys  
 210 215 220  
 Glu Leu Ile Glu Leu Asp Ala Pro Val Pro Asp Ser Asn Leu Trp His  
 225 230 235 240  
 Gly Phe Gln

<210> 8192

<211> 767

<212> PRT

<213> B.fragilis

<400> 8192

Val Met Ala Ile Pro Ser Arg Phe Thr Lys Val Lys Ile Ala Ala Gly  
 1 5 10 15  
 Tyr Thr Leu Leu Leu Val Val Leu Leu Leu Ser Leu Leu Phe Val His  
 20 25 30  
 Arg Glu Met Glu Lys Leu Ser Asp Thr Asp Asp Val Gln Ser Leu Gln  
 35 40 45  
 Thr Asp Ser Leu Leu Leu Leu Lys Glu Lys Asp Glu Asn Thr Ile  
 50 55 60  
 Arg Met Leu Gln Ile Ile Asn Glu Ala Asn Glu Ser Met Ile Thr Pro  
 65 70 75 80  
 Val Glu Leu Asp Ser Ile Ile Ala Glu Gln Asp Thr Val Ile Thr Gln  
 85 90 95  
 Gln Arg Val Gln His Arg Ile Ile Thr Lys Arg Asp Ser Val Ile Thr  
 100 105 110  
 Lys Arg Lys Lys Lys Gly Phe Phe Arg Arg Leu Gly Glu Val Phe Ala  
 115 120 125  
 Pro Ser Lys Glu Asp Thr Ala Val Leu Val Asn Thr Ala Val Glu Phe  
 130 135 140  
 Ala Thr Asp Thr Ile Leu Glu Pro Tyr Asn Pro Ile Asp Ser Leu His  
 145 150 155 160  
 Gln Arg Ile Arg Thr Val Thr Lys Arg Lys Ser Arg Pro Val Val Arg  
 165 170 175  
 Pro Asn Tyr Asn Ala Arg Leu Arg Arg Met Asn Lys Glu Leu Thr Thr  
 180 185 190  
 Arg Ile Asp Ser Met Ile Thr Thr Tyr Glu Gln Val Val Thr Gln Arg  
 195 200 205  
 Ala Met Asp Asn Ala Ser Glu Gln Gln Glu Leu Arg Asn Arg Ser Thr  
 210 215 220

Arg Thr Ile Gly Gly Ile Ala Ile Ala Ala Val Leu Leu Ser Ala Cys  
 225 230 235 240  
 Phe Leu Ile Met Ile Trp Arg Asp Ile Thr Arg Ser Asn Arg Tyr Arg  
 245 250 255  
 Lys Glu Leu Glu Glu Ala Asn Lys Arg Ala Glu Ala Leu Leu Glu Ala  
 260 265 270  
 Arg Glu Lys Leu Met Leu Ala Ile Thr His Asp Phe Lys Ala Pro Leu  
 275 280 285  
 Gly Ser Ile Ile Gly Tyr Thr Asp Leu Leu Thr Gly Leu Thr Thr Asp  
 290 295 300  
 Lys Arg Gln Arg Phe Tyr Leu Asp Asn Met Lys Ser Ser Ser Gln His  
 305 310 315 320  
 Leu Leu Lys Leu Val Ser Asp Leu Leu Asp Phe His Arg Leu Asp Leu  
 325 330 335  
 Asn Lys Ala Glu Val Asn Arg Val Thr Phe Asn Pro Ala Gln Leu Phe  
 340 345 350  
 Glu Glu Ile Arg Ile Ser Phe Lys Pro Leu Thr Asp Ala Lys His Leu  
 355 360 365  
 Thr Leu Ser Cys Ser Ile Asp Ala Glu Leu Asp Gly Arg Phe Ile Ser  
 370 375 380  
 Asp Pro Leu Arg Ile Arg Gln Ile Val Asn Asn Leu Leu Ser Asn Ala  
 385 390 395 400  
 Val Lys Phe Thr Ala Lys Gly Ser Ile Ala Leu Asn Ile Thr Tyr His  
 405 410 415  
 Ser Ser Ser Val Arg Ile Glu Val Val Asp Thr Gly Lys Gly Met Ala  
 420 425 430  
 Pro Gly Asp Arg Glu Lys Ile Phe Gly Leu Gly Leu Ser Ile Val His Lys  
 435 440 445  
 Ala Gln Gly Glu Glu Gly Phe Gly Leu Gly Leu Ser Ile Val His Lys  
 450 455 460  
 Leu Val Thr Leu Leu Glu Gly Ser Ile Ser Val Gln Ser Thr Leu Gly  
 465 470 475 480  
 Glu Gly Ser Arg Phe Ile Val Ile Leu Pro Leu Tyr Pro Val Gly Pro  
 485 490 495  
 Val Thr Gly Glu Lys Arg Glu Gly Asn Val Ser Ser Val Ser Thr Thr  
 500 505 510  
 Asp Gln Ala Gly Glu Asp Gly Val Met Ala Ser Pro Lys Leu Asn Arg  
 515 520 525  
 Val Leu Leu Ile Asp Asp Asp Arg Ile Gln Leu Ala Leu Thr Ala Ala  
 530 535 540  
 Met Leu Glu Gln Gln Gly Ile Gln Ala Val Cys Cys Gln Gln Pro Asp  
 545 550 555 560  
 Glu Leu Ile Glu Gln Leu Arg Thr Ala Thr Phe Asp Val Leu Leu Thr  
 565 570 575  
 Asp Val Gln Met Pro Ala Ile Asn Gly Phe Asp Leu Leu Lys Leu Leu  
 580 585 590  
 Arg Ala Ser Asn Ile Pro Gln Ala Arg Thr Ile Pro Val Ile Ala Val  
 595 600 605  
 Thr Ala Arg Ser Glu Met Asn Glu Gln Asp Phe Gln Glu His Gly Phe  
 610 615 620  
 Ala Gly Cys Leu His Lys Pro Phe Thr Val Lys Glu Leu Leu Thr Ile  
 625 630 635 640  
 Ile Ser Gly Glu Glu Met Thr Gly Ser Ser Ala Glu Leu Thr Pro Asp  
 645 650 655  
 Ser Leu Asn Phe Arg Ala Leu Thr Ala Phe Ser Glu Asp Asp Pro Glu  
 660 665 670  
 Ala Ala Ser Thr Ile Ile Gln Thr Phe Ile Glu Glu Thr Glu Lys Asn  
 675 680 685  
 Arg Asn Arg Met Glu Ser Ala Ile Arg Ala Thr Asp Val Asp Gly Ile

690	695	700
Ala Gly Met Ala His Lys Leu Leu Pro Leu Phe Thr Leu Leu Gly Ala		
705	710	715
Ser Glu Ala Leu Pro Leu Leu Leu Trp Leu Glu Gln Arg Arg Gly Glu		
	725	730
Ala Val Ser Asp Glu Met Ile Gln Lys Ala Asn Glu Ala Leu Arg Gln		
	740	745
Val Asp Ile Val Met Ala Glu Ala Arg Arg Tyr Ala Ala Gly Asp		
	755	760
		765

&lt;210&gt; 8193

&lt;211&gt; 319

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8193

Thr Thr Val Ile Met Thr Lys Lys Gln Phe Trp Leu Ile Gly Ala Trp		
1	5	10
Ser Leu Ile Ala Leu Ser Ala Cys Ser Ser Lys Pro Lys Asp Gly Leu		
	20	25
Thr Asp Thr Tyr Thr Ser Gly Val Ile Ala Ile Thr Ala Asp Glu Ser		
	35	40
Phe Gln Pro Ile Val Gln Glu Glu Ile Asp Val Phe Glu Gly Leu Phe		
	50	55
Pro Leu Ala Gly Ile Val Pro Arg Tyr Thr Thr Glu Val Asp Ala Ile		
65	70	75
Asn Gln Leu Leu Lys Asp Ser Val Arg Leu Ala Ile Thr Thr Arg Thr		
	85	90
Leu Thr Pro Glu Glu Met Asn Ser Phe His Ser Arg Lys Phe Phe Pro		
	100	105
Arg Glu Ile Lys Leu Ala Thr Asp Gly Leu Ala Leu Ile Val Asn Arg		
	115	120
Gln Asn Ala Asp Ser Leu Ile Ser Val Arg Asp Ile Arg Arg Ile Leu		
	130	135
Thr Gly Gln Val Gln Lys Trp Lys Glu Leu Tyr Pro Ala Ser Gly Leu		
145	150	155
Gly Asp Ile Gln Leu Val Phe Asp Asn Lys Asn Ser Ser Thr Val Arg		
	165	170
Phe Ala Val Asp Ser Ile Cys Lys Gly Ala Pro Leu Ser Asp Lys Asp		
	180	185
Val Lys Ala Leu Lys Thr Asn Gln Val Ile Asp Tyr Val Ala His		
	195	200
Thr Pro Asp Ala Ile Gly Val Ile Gly Val Asn Trp Leu Gly Asn Arg		
	210	215
Ser Asp Thr Thr Asn Leu Ser Phe Arg Asp Glu Ile Arg Val Met Ser		
225	230	235
Val Ser Ala Asp Asp Val Ala Thr Val Glu Asn Ser Tyr Lys Pro Tyr		
	245	250
Gln Ala Tyr Leu Tyr Tyr Gly Asn Tyr Pro Leu Ala Arg Pro Ile Tyr		
	260	265
Val Leu Leu Asn Asp Pro Arg Asn Ala Leu Pro Trp Gly Phe Ala Ser		
	275	280
Phe Leu Thr Ser Asp Arg Gly Gln Arg Ile Ile Leu Lys Ser Gly Leu		
	290	295
Val Pro Ala Thr Gln Pro Val Arg Ile Val Asp Val Lys Asp Glu		
305	310	315

&lt;210&gt; 8194

&lt;211&gt; 205

<212> PRT  
 <213> B.fragilis

<400> 8194

Ile	Leu	Thr	Ile	Met	Gly	Arg	Ala	Lys	Ile	Lys	Lys	Lys	Ser	Thr	Phe
1				5					10					15	
Ile	Asp	Met	Thr	Ala	Met	Ser	Asp	Val	Thr	Val	Leu	Leu	Leu	Thr	Phe
			20					25					30		
Phe	Met	Leu	Thr	Ser	Thr	Phe	Val	Lys	Lys	Glu	Pro	Val	Gln	Val	Thr
		35					40					45			
Thr	Pro	Ala	Ser	Val	Ser	Glu	Ile	Lys	Ile	Pro	Glu	Lys	Asn	Ile	Leu
	50					55					60				
Gln	Ile	Leu	Val	Asp	Pro	Asn	Gly	Lys	Ile	Phe	Met	Ser	Met	Asp	Lys
65					70					75				80	
Gln	Ser	Asp	Leu	Lys	Ala	Val	Leu	Glu	Ser	Met	Gly	Gln	Glu	Tyr	Gly
			85					90						95	
Val	Thr	Phe	Thr	Pro	Glu	Gln	Glu	Lys	Lys	Phe	Met	Leu	Ala	Ser	Thr
			100					105					110		
Phe	Gly	Val	Pro	Met	Lys	Asn	Met	Lys	Thr	Tyr	Leu	Asp	Leu	Pro	Thr
		115					120					125			
Asp	Lys	Gln	Asp	Ala	Val	Leu	Lys	Asn	Glu	Gly	Ile	Pro	Cys	Asp	Ser
	130					135					140				
Leu	Asp	Asn	Gln	Phe	Lys	Ser	Trp	Val	Arg	Asn	Ala	Arg	Ala	Val	Asn
145					150					155					160
Ala	Asp	Leu	Arg	Ile	Ala	Ile	Lys	Ala	Asp	Ala	Asp	Thr	Pro	Tyr	Ser
			165					170						175	
Val	Ile	Lys	Asn	Val	Met	Asn	Ser	Leu	Gln	Asp	Leu	Arg	Glu	Asn	Arg
			180					185					190		
Tyr	Asn	Leu	Ile	Thr	Ser	Leu	Lys	Thr	Thr	Ser	Glu	Asn			
		195					200					205			

<210> 8195

<211> 274

<212> PRT

<213> B.fragilis

<400> 8195

Lys	Ser	Lys	Met	Ala	Lys	Ile	Asp	Leu	Thr	Ser	Phe	Glu	Trp	Cys	Glu
1			5						10					15	
Leu	Ile	Phe	Lys	Gly	Lys	Asn	Lys	Ala	Tyr	Gly	Ala	Tyr	Lys	Met	Arg
			20					25					30		
Ala	Asp	Ser	Pro	Lys	Arg	His	Asn	Val	Ala	Met	Val	Ile	Val	Leu	Ile
		35					40					45			
Ile	Ala	Leu	Val	Gly	Phe	Ser	Leu	Pro	Thr	Leu	Ile	Lys	Met	Ala	Thr
	50					55					60				
Pro	Lys	Gln	Lys	Glu	Val	Met	Thr	Glu	Val	Thr	Thr	Leu	Ser	Gln	Leu
65					70					75				80	
Glu	Glu	Pro	Glu	Val	Lys	Gln	Glu	Glu	Met	Lys	Arg	Val	Glu	Pro	Val
			85					90					95		
Ala	Pro	Pro	Pro	Pro	Ala	Leu	Lys	Ser	Ser	Ile	Lys	Phe	Thr	Ala	Pro
			100					105					110		
Val	Ile	Lys	Lys	Asp	Glu	Glu	Val	His	Glu	Asp	Asp	Glu	Ile	Lys	Ser
		115					120					125			
Gln	Glu	Glu	Leu	Thr	Gln	Thr	Lys	Val	Ala	Ile	Ser	Ile	Ala	Asp	Val
	130					135					140				
Lys	Gly	Asn	Asp	Glu	Ala	Asn	Gly	Lys	Asp	Ile	Ala	Asp	Leu	Lys	Gln
145					150					155				160	
Val	Val	Thr	Gln	Ala	Glu	Pro	Ala	Glu	Glu	Gln	Val	Phe	Asp	Met	Val
			165					170						175	



Glu	Gln	Met	Pro	Thr	Phe	Pro	Gly	Gly	Thr	Thr	Glu	Leu	Met	Lys	Tyr
			180					185					190		
Ile	Gly	Glu	His	Leu	Lys	Tyr	Pro	Pro	Ile	Ala	Ala	Glu	Asn	Gly	Thr
		195					200					205			
Gln	Gly	Lys	Val	Ile	Cys	Arg	Phe	Val	Ile	Gly	Lys	Asp	Gly	Gln	Val
	210					215					220				
Arg	Asp	Val	Thr	Ile	Ala	Arg	Ser	Leu	Asp	Pro	Tyr	Cys	Asp	Lys	Glu
225					230					235					240
Ala	Ile	Arg	Val	Ile	Lys	Ser	Met	Pro	Lys	Trp	Ile	Pro	Gly	Lys	Gln
				245					250					255	
Asn	Gly	Lys	Ala	Val	Ala	Val	Asn	Phe	Thr	Val	Pro	Ile	Val	Phe	Lys
			260					265					270		
Leu	Gln														

&lt;210&gt; 8196

&lt;211&gt; 300

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8196

Met	Gly	Lys	Ile	Glu	Ile	Arg	Asn	Leu	Cys	Phe	Arg	Tyr	Gly	Lys	Gln
1			5						10					15	
Met	Val	Leu	Asn	Asn	Leu	Asn	Leu	Asp	Ile	Pro	Glu	Asn	Ala	Leu	Tyr
			20					25					30		
Gly	Tyr	Leu	Gly	Asn	Asn	Gly	Ser	Gly	Lys	Thr	Thr	Thr	Ile	Gln	Val
		35					40					45			
Leu	Leu	Gly	Leu	Ala	Arg	Pro	Val	Lys	Gly	Glu	Val	Leu	Tyr	Asp	Gly
	50					55					60				
Gln	Pro	Phe	Arg	Asp	Gln	Arg	Glu	Lys	Gln	Leu	Arg	Lys	Ile	Gly	Leu
65					70				75						80
Cys	Pro	Gly	Glu	Pro	Phe	Tyr	Tyr	Asp	Asn	Leu	Thr	Gly	Tyr	Glu	His
				85					90					95	
Leu	Ala	Tyr	Leu	Asp	His	Ile	Tyr	His	Cys	Gly	Arg	Thr	Ala	Ile	Asn
			100					105					110		
Lys	Val	Leu	Ala	Ile	Thr	Gly	Ile	Glu	Asn	Ala	Arg	Asn	Lys	Lys	Leu
		115					120					125			
Arg	His	Tyr	Ser	Thr	Gly	Met	Ile	His	Arg	Leu	Gly	Met	Ala	Met	Ala
	130					135					140				
Leu	Leu	His	Asp	Pro	Asp	Ile	Leu	Phe	Leu	Asp	Glu	Pro	Leu	Asn	Gly
145					150					155					160
Leu	Asp	Pro	Glu	Gly	Ile	His	Ser	Ile	Arg	Glu	Leu	Leu	Leu	Gln	Leu
				165					170					175	
His	Gln	Glu	Gly	Lys	Thr	Val	Phe	Leu	Ser	Ser	His	Leu	Leu	Asp	Glu
			180					185						190	
Val	Glu	Lys	Thr	Cys	Thr	His	Val	Gly	Ile	Leu	Gln	His	Gly	Cys	Leu
		195					200					205			
Leu	Tyr	Gln	Gly	Asp	Leu	Ser	Glu	Leu	Leu	Asn	Ser	Ile	Glu	Lys	Arg
	210					215					220				
Ile	His	Ile	Arg	Leu	Asp	Lys	Val	Asp	Leu	Leu	His	Ser	Val	Cys	Lys
225					230				235						240
Glu	Val	Gln	Ile	Asp	Ser	Arg	Ile	Lys	Ser	Glu	Ser	Ile	Leu	Glu	Val
				245					250					255	
Ile	Leu	Ser	Asn	Asp	Thr	Thr	Tyr	Asp	Arg	Leu	Ile	Glu	Leu	Leu	Gly
			260					265						270	
Gln	Gly	Gly	Tyr	His	Ile	Ser	Ala	Ile	Gln	Pro	Leu	Glu	Asn	Thr	Leu
		275					280					285			
Glu	Ser	Val	Tyr	Leu	Lys	Leu	Thr	Ser	Gln	Thr	Lys				
	290					295					300				

<210> 8197  
 <211> 275  
 <212> PRT  
 <213> B.fragilis

<400> 8197

Thr Asn Arg Ile Met Ile Arg Asp Thr Phe Phe Ser Gln Thr Arg Phe  
 1 5 10 15  
 Val Asn Leu Cys Arg Lys Glu Met Val Glu Asn Trp Lys Ser Asn Leu  
 20 25 30  
 Leu Arg Val Ala Leu Met Tyr Gly Ala Met Ala Val Ile Met Leu Trp  
 35 40 45  
 Ser Gly Tyr Leu Ser Tyr Arg Ala Val Gly Gln Asp Thr Asp Ser Thr  
 50 55 60  
 Trp Glu Phe Asn Leu Val Ile Phe Met Trp Gly Leu Cys Val Phe Gly  
 65 70 75 80  
 Cys Leu Ser Ala Ser Phe Thr Met Glu Arg Met Lys Ser Lys Thr Gly  
 85 90 95  
 Arg Leu Ser Val Leu Met Thr Pro Ala Thr Ser Phe Glu Lys Tyr Phe  
 100 105 110  
 Ser Arg Trp Leu Val Phe Thr Val Val Phe Leu Ile Val Phe Leu Ile  
 115 120 125  
 Thr Tyr Lys Leu Ala Asp Tyr Thr Lys Val Leu Val Tyr Ser Leu Val  
 130 135 140  
 Tyr Pro Glu Asn Asn Ala Ile Ala Ile Thr Pro Leu Ser His Leu Phe  
 145 150 155 160  
 Gly Glu Asn Thr Asp Tyr Tyr Thr Val Phe Lys His Thr His Thr Phe  
 165 170 175  
 Val Leu Met Ile Ala Ser Tyr Phe Phe Cys Gln Ser Cys Phe Val Leu  
 180 185 190  
 Gly Ser Ser Val Trp Pro Lys Asn Ser Phe Ile Lys Thr Phe Ser Ala  
 195 200 205  
 Gly Met Ile Ile Phe Ile Ala Tyr Val Leu Ile Val Val Gly Phe Ala  
 210 215 220  
 Lys Leu Ile Trp Pro Asp Gln Ile Ser Tyr Asn Pro Asp Met Ser Glu  
 225 230 235 240  
 Glu Thr Ala Phe Ala Cys Leu Ser Ala Ile Ala Val Leu Phe Thr Leu  
 245 250 255  
 Thr Asn Trp Thr Leu Ala Tyr Phe Arg Phe Lys Glu Ser Glu Ile Ile  
 260 265 270  
 Asn Arg Met  
 275

<210> 8198  
 <211> 286  
 <212> PRT  
 <213> B.fragilis

<400> 8198

Met Lys Met Ile Thr Val Glu Asn Leu Ser Phe Leu Tyr Arg Lys Ser  
 1 5 10 15  
 Lys Arg Ala Val Leu His Asp Phe Ser Leu Ser Leu Glu Lys Gly Arg  
 20 25 30  
 Val Tyr Gly Leu Leu Gly Lys Asn Gly Ala Gly Lys Ser Thr Leu Leu  
 35 40 45  
 Tyr Leu Met Ser Gly Leu Leu Thr Pro Lys Ser Gly Lys Val Val Tyr  
 50 55 60  
 His Asp Val Asp Val Arg Arg Arg Leu Pro Ile Thr Leu Gln Asp Met

65					70					75				80
Phe	Leu	Val	Pro	Glu	Glu	Phe	Asp	Leu	Pro	Pro	Val	Ser	Leu	Ile
				85					90					95
Tyr	Ile	Glu	Leu	Asn	Ser	Pro	Phe	Tyr	Pro	Arg	Phe	Ser	Lys	Glu
			100					105					110	
Met	Val	Lys	Tyr	Leu	His	Tyr	Phe	Glu	Met	Asp	Ile	Asn	Ile	Asp
		115					120				125			
Gly	Ala	Leu	Ser	Met	Gly	Gln	Lys	Lys	Lys	Val	Phe	Met	Ser	Phe
	130					135				140				
Leu	Ala	Thr	Asn	Thr	Ser	Leu	Leu	Leu	Met	Asp	Glu	Pro	Thr	Asn
145					150					155				160
Leu	Asp	Ile	Pro	Gly	Lys	Ser	Gln	Phe	Arg	Lys	Phe	Ile	Ala	Ser
			165					170						175
Met	Thr	Asp	Asp	Lys	Thr	Ile	Leu	Ile	Ser	Thr	His	Gln	Val	Arg
		180					185					190		
Ile	Asp	Lys	Val	Leu	Asp	His	Val	Leu	Ile	Met	Asp	Asn	Ser	Arg
	195					200					205			
Leu	Leu	Asn	Glu	Ser	Thr	Met	Ser	Ile	Cys	Asp	Lys	Leu	Phe	Phe
	210				215					220				
Glu	Ser	Glu	Asn	Arg	Glu	Leu	Leu	Gln	Ser	Ser	Leu	Phe	Ser	Thr
225				230					235					240
Ser	Ile	Gln	Gly	Asn	Phe	Leu	Leu	Leu	Pro	Asn	Glu	Ser	Gly	Glu
			245					250					255	
Ser	Glu	Ile	Asn	Leu	Glu	Leu	Leu	Phe	Asn	Ala	Thr	Leu	Ala	Val
		260						265				270		Pro
Glu	Arg	Ile	Ser	Ala	Leu	Phe	His	Ser	Lys	Gln	Ile	Glu	Leu	
	275					280					285			

&lt;210&gt; 8199

&lt;211&gt; 653

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8199

Lys	Glu	Val	Ile	Ser	Val	Glu	Gly	Leu	Thr	Val	Glu	Phe	Asn	Ala	Thr
1				5				10					15		
Pro	Leu	Phe	Glu	Asp	Val	Ser	Tyr	Val	Ile	Asn	Lys	Lys	Asp	Arg	Ile
	20						25					30			
Ala	Leu	Val	Gly	Lys	Asn	Gly	Ala	Gly	Lys	Ser	Thr	Met	Leu	Lys	Ile
	35					40					45				
Leu	Ala	Gly	Leu	Gln	Ser	Pro	Thr	Arg	Gly	Val	Ile	Ala	Ile	Pro	Arg
	50				55					60					
Asp	Val	Thr	Ile	Gly	Tyr	Leu	Pro	Gln	Val	Met	Ile	Leu	Ala	Asp	Asn
65				70				75						80	
His	Thr	Val	Met	Glu	Glu	Ala	Glu	Leu	Ala	Phe	Glu	His	Ile	Phe	Glu
			85				90						95		
Leu	Gln	Ala	Asp	Leu	Glu	Arg	Met	Asn	Gln	Glu	Leu	Ala	Asp	Arg	Thr
	100						105					110			
Asp	Tyr	Asp	Ser	Glu	Glu	Tyr	His	Lys	Leu	Ile	Asp	Arg	Phe	Thr	His
	115					120					125				
Glu	Asn	Asp	Arg	Phe	Leu	Met	Met	Gly	Gly	Thr	Asn	Phe	His	Ala	Glu
	130					135				140					
Ile	Glu	Arg	Thr	Leu	Ile	Gly	Leu	Gly	Phe	Ser	Arg	Glu	Asp	Phe	Asn
145				150				155						160	
Arg	Pro	Thr	Ser	Glu	Phe	Ser	Gly	Gly	Trp	Arg	Met	Arg	Ile	Glu	Leu
		165						170					175		
Ala	Lys	Leu	Leu	Arg	Lys	Pro	Asp	Val	Leu	Leu	Leu	Leu	Asp	Glu	Pro
	180					185						190			
Thr	Asn	His	Leu	Asp	Ile	Glu	Ser	Ile	Gln	Trp	Leu	Glu	Thr	Phe	Leu

<210> 8200

<211> 199  
 <212> PRT  
 <213> B.fragilis

<400> 8200

Pro Met Thr Val Ser Lys Thr Lys Ala Lys Leu Val Asp Val Ala Arg  
 1 5 10 15  
 Gln Leu Phe Ala Lys Met Gly Val Glu Asn Thr Thr Met Asn Asp Ile  
 20 25 30  
 Ala Leu Ala Ser Lys Lys Gly Arg Arg Thr Leu Tyr Thr Tyr Phe Lys  
 35 40 45  
 Ser Lys Asp Glu Ile Tyr Leu Ala Val Val Glu Ser Glu Leu Asp Ile  
 50 55 60  
 Leu Ser Asp Met Met Lys Arg Val Ala Asp Lys Asp Ile Ser Pro Asp  
 65 70 75 80  
 Lys Lys Ile Ile Glu Met Ile Tyr Thr Arg Leu Asp Ala Val Lys Glu  
 85 90 95  
 Val Val Tyr Arg Asn Gly Thr Leu Arg Ala Asn Phe Phe Arg Asp Ile  
 100 105 110  
 Trp Arg Val Glu Lys Val Arg Lys Arg Phe Asp Ala Lys Glu Met Gln  
 115 120 125  
 Leu Phe Lys Ser Val Leu Lys Glu Gly Gln Asp Lys Gly Val Phe His  
 130 135 140  
 Val Asp Asp Val Glu Met Thr Ala Ala Leu Val His Tyr Cys Val Lys  
 145 150 155 160  
 Gly Ile Glu Val Pro Tyr Ile Arg Gly His Ile Gly Ala Asn Leu Asp  
 165 170 175  
 Met Glu Thr Arg Lys Arg Tyr Val Ala Asn Ile Val Phe Gly Ala Leu  
 180 185 190  
 His Arg Thr Glu Ile Asn Gln  
 195

<210> 8201  
 <211> 165  
 <212> PRT  
 <213> B.fragilis

<400> 8201

Leu Leu Phe Leu Ser Arg Lys Ser Lys Arg Glu Phe Ile Asn Lys Asn  
 1 5 10 15  
 Arg Thr Met Arg Thr Ser Val Lys Phe Ile Leu Met Phe Val Leu Leu  
 20 25 30  
 Met Leu Ser Phe Ser Ile Ser Gly Asn Ala Leu Asn Ile Thr Glu Cys  
 35 40 45  
 Ser His Lys Ser Val Asn Ser Cys Gln Val Ser Ala Ser Ser Leu Asp  
 50 55 60  
 Thr Asn Tyr Ser Tyr Arg Tyr Gly Ser Asp Ile Thr Gly Phe Asp Lys  
 65 70 75 80  
 Ser Gln Thr Leu Ser Val Ser Asp Val Glu Leu Gly Phe Lys Pro Val  
 85 90 95  
 Ser Glu Thr Tyr Ser Ser Asn Asn Leu Arg Leu Arg Arg Ile Leu Glu  
 100 105 110  
 Asp Ser Asp Leu Phe Lys Asp Thr Met Arg Lys Trp Cys Leu Val Arg  
 115 120 125  
 Glu Asn Leu Leu Val Leu Asp Gln Ser Lys Ser Tyr Tyr Ser Asp Lys  
 130 135 140  
 Asp Pro His Tyr Ala Ser Ile Ser Cys His Tyr Tyr Ile Phe Ala Leu  
 145 150 155 160  
 Arg Arg Ile Leu Ile

<210> 8202  
 <211> 1518  
 <212> PRT  
 <213> B.fragilis

<400> 8202

Glu	Thr	Ser	Phe	Met	Lys	Arg	Lys	Trp	Ile	Lys	Trp	Val	Ser	Trp	Ile
1				5					10					15	
Leu	Leu	Thr	Pro	Leu	Ile	Leu	Phe	Val	Ile	Leu	Met	Val	Leu	Leu	Tyr
			20					25					30		
Ile	Pro	Pro	Val	Gln	Asn	Phe	Leu	Arg	Lys	Glu	Ala	Ala	Ala	Tyr	Ala
		35				40					45				
Ser	Glu	Ala	Thr	Gly	Met	Gln	Ile	Asn	Val	Arg	Arg	Ile	Asp	Leu	Arg
	50					55				60					
Phe	Pro	Leu	Asn	Leu	Leu	Val	Arg	Gly	Val	Glu	Val	Ile	Gln	Ala	Pro
65					70					75					80
Asp	Thr	Leu	Leu	Ser	Leu	Glu	Ser	Leu	Asn	Val	His	Val	Gln	Ala	Leu
				85					90					95	
Pro	Leu	Phe	Arg	Gly	Lys	Val	Glu	Val	Asp	Asp	Ile	Ser	Leu	Gln	Gln
			100					105					110		
Val	Ala	Val	Asn	Ser	Ala	Asn	Leu	Ile	Asp	Gly	Met	Arg	Leu	Lys	Gly
			115					120					125		
Val	Leu	Gly	Ser	Phe	Arg	Leu	Glu	Ser	His	Gly	Val	Asp	Leu	Pro	Asn
	130					135					140				
Glu	Ile	Ala	Ile	Ile	Asn	Arg	Ala	Glu	Leu	Ser	Asp	Thr	His	Val	Gln
145					150					155					160
Leu	Leu	Leu	Asn	Asp	Thr	Thr	Ala	Thr	Pro	Lys	Asp	Thr	Ala	Gln	Ser
				165				170						175	
Glu	Val	Arg	Trp	Lys	Val	Asp	Leu	Arg	His	Leu	Lys	Leu	Lys	Asn	Val
			180					185					190		
Ser	Phe	Ser	Met	Gln	Leu	Pro	Ala	Asp	Ser	Met	Arg	Leu	Ala	Ala	His
		195				200					205				
Val	Gly	Glu	Ala	Gln	Val	Asn	Asp	Ala	Glu	Ala	Asp	Leu	Lys	Asn	Leu
	210					215					220				
His	Tyr	Gly	Leu	Arg	Ser	Phe	Leu	Val	Ser	Gly	Thr	Ser	Val	Asn	Tyr
225					230					235					240
Asp	Val	Gly	Thr	Ala	Glu	Pro	Ala	Glu	Gly	Phe	Asp	Pro	Ser	His	Ile
				245					250					255	
Ala	Leu	Arg	Asp	Ile	Arg	Ile	Gly	Leu	Asp	Ser	Met	Tyr	Tyr	Arg	Gly
			260					265					270		
Arg	Asn	Met	Asn	Ala	Val	Ile	Arg	Glu	Phe	Ser	Met	Asn	Asp	Arg	Ser
		275					280					285			
Gly	Leu	Ser	Val	Asn	Ser	Leu	Thr	Gly	Arg	Val	Phe	Ala	Asn	Asp	Thr
	290					295					300				
Ile	Ile	Gln	Val	Pro	Ser	Leu	Lys	Leu	Leu	Thr	Pro	His	Ser	Glu	Met
305					310					315					320
Asp	Leu	Thr	Ala	Gln	Thr	Tyr	Trp	Glu	Leu	Val	Asn	Ile	Pro	Thr	Thr
				325					330					335	
Gly	Arg	Leu	Thr	Ala	Arg	Phe	Asn	Ala	Met	Ile	Gly	Lys	Gln	Asp	Val
			340					345					350		
Leu	Leu	Leu	Ala	Gly	Gly	Leu	Pro	Asp	Ser	Phe	Lys	Glu	Ala	Tyr	Pro
		355					360					365			
Phe	Arg	Pro	Leu	Val	Ile	Arg	Ala	Gly	Thr	Glu	Gly	Asn	Leu	Lys	Glu
	370					375					380				
Met	Gln	Ile	Thr	Arg	Phe	Ser	Ala	Glu	Leu	Pro	Gly	Ala	Phe	Ser	Leu
385					390					395					400
Ser	Gly	Gly	Gly	Glu	Leu	Leu	Asn	Leu	Thr	Asp	Ser	Leu	Glu	Arg	Ser

	405		410		415
Ala Ile Ile Asp	Leu Arg Met Gln Thr	Gln Asn Leu Asn Phe Leu Thr			
	420		425		430
Ala Leu Gly Gly	Thr Arg Pro Asp Ser	Leu Leu Val Ile Pro Asn Gln			
	435		440		445
Met Ser Leu Val	Ala Lys Ala Arg Met	Lys Gly Pro Gln Tyr Met Ala			
	450		455		460
Gln Leu Leu Leu	Lys Glu Gly Glu Gly	Met Leu Asn Leu Asp Ala Ala			
	465		470		475
Tyr Asn Gly Ser	Thr Glu Ala Tyr Arg	Ala Asp Leu Lys Val Asp Ala			
	485		490		495
Leu Gln Leu Tyr	His Phe Leu Pro Lys	Asp Ser Ile Tyr Glu Leu Thr			
	500		505		510
Thr Ser Val Ala	Ala Val Gly Arg Gly	Ile Asp Phe Thr Ser Tyr Arg			
	515		520		525
Thr Thr Ala Ser	Leu Lys Ala Ser	Leu Gln Ser Leu His Tyr Gly Arg			
	530		535		540
Tyr Gln Ile Ser	Gly Ile Glu Val Thr	Gly Asp Val Lys Asn Ala Leu			
	545		550		555
Ala Thr Ala Arg	Leu Val Ser Asp	Asn Arg Leu Leu Lys Met Asn Ala			
	565		570		575
Asn Ala Glu Tyr	His Leu Ala Lys Pro	Tyr Met Asp Gly Lys Leu Asp			
	580		585		590
Met Asp Val Thr	Gln Leu Asp Leu Tyr	Glu Leu Gly Ile Ala Pro Lys			
	595		600		605
Pro Leu Lys Tyr	Pro Leu Ala Phe	Asn Phe Thr Ala Glu Ala Arg Arg			
	610		615		620
Asp Arg Ile Phe	Thr His Leu Thr	Ala Gly Asp Met Lys Leu Asn Leu			
	625		630		635
Ser Ala Arg Ser	Ser Leu Asp Lys Leu	Ile Lys Gln Ser Ala His Phe			
	645		650		655
Ala Asp Val Leu	Val Lys Gln Ile Asp	Lys Lys Glu Leu Asp His Gly			
	660		665		670
Glu Leu Arg Glu	Ala Leu Pro Thr	Ala Ile Phe Ser Met Ser Ala Gly			
	675		680		685
Lys Glu Asn Pro	Leu Ala Tyr Tyr	Leu Ala Thr Lys Asp Ile Ala Phe			
	690		695		700
His Asp Val Gly	Val Lys Phe Gly Thr	Ala Pro Asp Trp Gly Ile Asn			
	705		710		715
Gly Lys Ala Ser	Ile His Ala Leu Lys	Met Asp Thr Leu Gln Leu Asp			
	725		730		735
Thr Ile Tyr Phe	Thr Val Lys Gln Asp	Thr Thr Arg Met Ser Leu His			
	740		745		750
Gly Gly Val Ile	Asn Gly Pro Lys	Asn Pro Gln Ile Val Phe Lys Ser			
	755		760		765
Ser Phe Ala Gly	Glu Ile Arg Asn Asp	Asp Ala Glu Leu Thr Leu Arg			
	770		775		780
Tyr Glu Asn Ala	Lys Gly Glu Thr Gly	Val Leu Phe Gly Val Asn Val			
	785		790		795
Arg Pro Leu Val	Glu Gly Asn Gly Lys	Gly Asp Gly Leu Ala Phe Thr			
	805		810		815
Leu Ile Pro Glu	Asn Pro Ile Ile	Ala Phe Arg Lys Phe His Phe Val			
	820		825		830
Asp His His Asn	Trp Ile Tyr Leu His	Lys Asn Met Arg Leu Tyr Ala			
	835		840		845
Asn Val Asp Met	Ala Asp Asp Glu	Asp Met Gly Phe Arg Ile Lys Ser			
	850		855		860
Asn Arg Ser Asp	Thr Val Ser Leu Gln	Asn Ile Asp Val Glu Leu Gln			
	865		875		880

Arg Ile Arg Leu Ser Glu Ile Ser Glu Val Leu Pro Tyr Leu Pro Asp  
 885 890 895  
 Leu Ser Gly Leu Phe Ser Ala Glu Ala Asn Tyr Val Gln Thr Ala Thr  
 900 905 910  
 Ser Leu Gln Val Ser Ala Glu Ala Asn Ile Asp Glu Leu Thr Tyr Glu  
 915 920 925  
 Arg Gln Arg Ile Gly Asp Val Ala Leu Gly Val Thr Trp Leu Pro Gly  
 930 935 940  
 Glu Arg Gly Lys His Tyr Ile Ser Thr Tyr Leu Thr His Glu Gly Glu  
 945 950 955 960  
 Glu Ile Leu Met Ala Asp Gly Ser Leu His Pro Ser Val Thr Gly Lys  
 965 970 975  
 Asp Ser Ile Glu Val Asn Ala Ile Met Glu His Phe Pro Leu Lys Ile  
 980 985 990  
 Ala Asn Ala Phe Val Pro Asp Gln Val Val Thr Leu Ser Gly Asp Met  
 995 1000 1005  
 Asp Gly Gly Leu His Ile Thr Gly Asp Thr Asp Arg Pro Leu Val Asn  
 1010 1015 1020  
 Gly Asp Leu Val Leu Asp Ser Val Ser Val Phe Ala Arg Gln Ala Gly  
 1025 1030 1035 1040  
 Ala Arg Phe Thr Phe Asp Asn Arg Pro Val Gln Ile Lys Asn Ser Arg  
 1045 1050 1055  
 Leu Thr Phe Asp Lys Phe Ala Ile Phe Thr Thr Gly Lys Asn Pro Phe  
 1060 1065 1070  
 Thr Ile Asp Gly Thr Val Asp Phe Arg Asn Leu Thr Asp Pro Arg Val  
 1075 1080 1085  
 Asn Leu Ser Met Leu Ala Glu Asn Tyr Met Leu Leu Asn Ala Pro Arg  
 1090 1095 1100  
 Thr Lys Glu Ser Leu Val Tyr Gly Lys Val Phe Val Asp Phe Asn Ala  
 1105 1110 1115 1120  
 Thr Val Arg Gly Pro Ile Asn Ala Leu Val Met Arg Gly Asn Met Asn  
 1125 1130 1135  
 Leu Leu Gly Asn Thr Asp Val Thr Tyr Val Leu Met Asp Ser Pro Leu  
 1140 1145 1150  
 Thr Val Gln Asp Arg Leu Gly Asp Leu Val Thr Phe Thr Ser Phe Ser  
 1155 1160 1165  
 Asp Thr Thr Thr Val Gln Lys Glu Glu Ala Pro Val Val Ser Leu Gly  
 1170 1175 1180  
 Gly Leu Asp Met Ile Met Thr Val Gln Ile Asp Pro Gly Val Arg Leu  
 1185 1190 1195 1200  
 Lys Ala Asp Leu Ser Ala Asp Arg Ser Ser Arg Val Glu Leu Gln Gly  
 1205 1210 1215  
 Gly Gly Asn Leu Ser Met Gln Tyr Thr Pro Gln Gly Asp Leu Ser Leu  
 1220 1225 1230  
 Ser Gly Arg Tyr Thr Leu Thr Gly Gly Met Met Lys Tyr Ala Leu Pro  
 1235 1240 1245  
 Val Ile Pro Leu Lys Glu Phe Asn Ile Asn Asn Gly Ser Tyr Val Glu  
 1250 1255 1260  
 Trp Thr Gly Asn Pro Met Asp Pro Met Leu Asn Leu Lys Ala Thr Glu  
 1265 1270 1275 1280  
 Arg Leu Arg Ala Ser Val Gly Ser Glu Asn Gly Gln Ser Arg Met Val  
 1285 1290 1295  
 Asn Phe Asp Val Ser Ile Val Val Lys Asn Arg Leu Asp Asn Leu Ser  
 1300 1305 1310  
 Leu Ala Phe Glu Ile Asp Ala Pro Asp Asp Ala Glu Val Gln Asn Gln  
 1315 1320 1325  
 Leu Ala Ser Met Ser Ala Asp Glu Arg Gly Lys Gln Ala Ile Ala Met  
 1330 1335 1340  
 Leu Ala Thr Gly Leu Tyr Leu Ala Asn Ser Gly Ser Ser Gly Gly Gly



1345                      1350                      1355                      1360  
 Gly Leu Asn Met Gly Ser Ala Leu Asn Ser Ile Leu Ser Ser Gln Ile  
                                  1365                      1370                      1375  
 Asn Ala Leu Ala Gly Asn Leu Lys Asn Ala Ser Phe Ser Met Gly Val  
                                  1380                      1385                      1390  
 Glu Asp His Asp Ala Ala Asp Ala Gly Gly Lys Arg Thr Asp Tyr Ser  
                                  1395                      1400                      1405  
 Phe Arg Tyr Ser Gln Arg Phe Phe Asn Asp Arg Phe Gln Ile Val Leu  
                                  1410                      1415                      1420  
 Gly Gly Lys Val Ser Thr Gly Ala Gln Ala Thr Asn Asp Val Glu Ser  
 1425                      1430                      1435                      1440  
 Phe Ile Asp Asn Ile Ser Leu Glu Tyr Arg Leu Asp Thr Ser Gly Thr  
                                  1445                      1450                      1455  
 Arg Tyr Ile Arg Leu Phe His Asn Lys Asn Tyr Glu Ser Val Leu Glu  
                                  1460                      1465                      1470  
 Gly Glu Ile Thr Glu Thr Gly Ile Gly Leu Val Leu Arg Lys Arg Ile  
                                  1475                      1480                      1485  
 Asp Arg Leu Gly Glu Leu Phe Ile Phe Arg Lys Lys Lys Lys Thr Leu  
                                  1490                      1495                      1500  
 Pro Glu Thr Gln Lys Ala Pro Ser Asp Gly Glu Ala His Gln  
 1505                      1510                      1515

<210> 8203

<211> 76

<212> PRT

<213> B.fragilis

<220>

<221> UNSURE

<222> (20), (25)

<223> Identity of amino acid sequences at the above locations are unknown.

<400> 8203

Arg Ser Phe Phe Thr Tyr Leu Tyr Tyr Lys Tyr Leu Thr Val Leu Lys  
 1                                      5                                      10                                      15  
 Phe Asp Leu Xaa Leu Thr Gly Leu Xaa Ile Ile Phe Ser Lys Glu Pro  
                                  20                                      25                                      30  
 Leu Leu Phe Lys Ile Leu Ala Pro Phe Gln Lys Ala Gly Ala Lys Gly  
                                  35                                      40                                      45  
 Lys Gly Val Asn Phe Lys Pro Ala Lys Val Phe Gly Lys Phe Phe Phe  
                                  50                                      55                                      60  
 Lys Val Pro Gly Phe Asn Phe Gln Ala Leu Leu Gly  
 65                                      70                                      75

<210> 8204

<211> 301

<212> PRT

<213> B.fragilis

<400> 8204

Ala Thr Lys Val Arg Gly Phe Glu Val Lys Ser Tyr Ile Cys Arg Leu  
 1                                      5                                      10                                      15  
 Lys Leu Asn Lys Ser Val Met Lys Gln Asn Phe Trp Ile Leu Leu Ile  
                                  20                                      25                                      30  
 Ile Leu Ala Cys Ser Ala Val Ala Cys Lys Ser Gly Gln Lys Lys Asp  
                                  35                                      40                                      45  
 Gly Asn Met Glu Lys Glu Thr Val Leu Lys Ile Glu Thr Ser Met Gly  
                                  50                                      55                                      60  
 Asp Ile Lys Val Lys Leu Tyr Asn Glu Thr Pro Lys His Arg Asp Asn

65 70 75 80  
 Phe Ile Lys Leu Ala Lys Asp Gly Thr Tyr Asn Gly Thr Leu Phe His  
 85 90 95  
 Arg Val Ile Lys Asp Phe Met Val Gln Ala Gly Asp Pro Glu Ser Lys  
 100 105 110  
 Asn Ala Pro Lys Gly Lys Met Leu Gly Ser Gly Asp Val Gly Tyr Thr  
 115 120 125  
 Val Pro Ala Glu Phe Val Tyr Pro Lys Tyr Phe His Lys Lys Gly Ala  
 130 135 140  
 Leu Ser Ala Ala Arg Gln Gly Asp Glu Val Asn Pro Lys Lys Glu Ser  
 145 150 155 160  
 Ser Gly Cys Gln Phe Tyr Ile Val Thr Gly Lys Val Phe Asn Asp Ser  
 165 170 175  
 Thr Leu Leu Asn Met Glu Gln Gln Lys Asn Gln Asn Lys Val Thr Glu  
 180 185 190  
 Ala Phe Asn Ala Leu Ala Gln Lys His Met Lys Glu Ile Tyr Lys Met  
 195 200 205  
 Arg Lys Ala Asn Asp Gln Asp Gly Leu Tyr Ala Leu Gln Asp Thr Leu  
 210 215 220  
 Phe Ile Gln Ala Glu Ala Glu Ala Ala Lys Gln Pro Asp Phe His Phe  
 225 230 235 240  
 Thr Pro Glu Gln Ile Lys Ala Tyr Thr Thr Val Gly Gly Thr Pro His  
 245 250 255  
 Leu Asp Gly Glu Tyr Thr Val Phe Gly Glu Val Val Glu Gly Met Asp  
 260 265 270  
 Ile Val Asp Lys Ile Gln Gln Val Lys Thr Asp Arg Ser Asp Arg Pro  
 275 280 285  
 Glu Glu Asp Val Lys Ile Ile Asn Val Ser Val Ile Glu  
 290 295 300

&lt;210&gt; 8205

&lt;211&gt; 128

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8205

Thr Leu Ser Leu Lys His Ser Gln Ser Val Phe Val Leu Thr Lys Arg  
 1 5 10 15  
 Phe Phe Leu Leu Tyr Lys Arg Leu Ile Lys Leu Lys Lys Ser Ile Leu  
 20 25 30  
 Glu Lys Val Leu Leu Thr Ser Pro Pro Ile Lys Gln Ile Ile Gln Ser  
 35 40 45  
 Ser Glu Thr Ser Tyr Ile Lys Pro Ile His Ser Leu Glu Ser Pro Leu  
 50 55 60  
 Leu Gln Gly Ser Val Pro Pro Arg Asp Ala Glu Ile Pro Thr Ser Ser  
 65 70 75 80  
 Asn Asn Arg Tyr Ile Gly Gln Glu Lys Ala Ile Gly Phe Pro Ile Ala  
 85 90 95  
 Ile Ser Ile Lys Lys Val Leu Ser Gly Gly Ala Leu Pro Phe Leu Arg  
 100 105 110  
 Pro Leu Tyr Lys Thr Ser His Pro Leu Arg Ser Phe Asp Arg Arg Gly  
 115 120 125

&lt;210&gt; 8206

&lt;211&gt; 333

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8206

Glu Asn Ser Ser Tyr Phe Val Leu His Ser Ser Phe Tyr Phe Val Leu  
 1 5 10 15  
 Leu Gln Arg Tyr Leu Met Arg His Ile Thr Asn Leu Leu Ile Phe Thr  
 20 25 30  
 Val Met Lys Pro Thr Leu Phe Val Leu Ala Ala Gly Met Gly Ser Arg  
 35 40 45  
 Tyr Gly Gly Leu Lys Gln Leu Asp Gly Leu Gly Pro Asn Gly Glu Thr  
 50 55 60  
 Ile Met Asp Tyr Ser Ile Tyr Asp Ala Ile Arg Gly Gly Phe Gly Lys  
 65 70 75 80  
 Val Val Phe Val Ile Arg Lys Asp Phe Glu Gln Asp Phe Arg Glu Lys  
 85 90 95  
 Ile Leu Ser Lys Tyr Glu Asn His Ile Pro Val Glu Leu Val Phe Gln  
 100 105 110  
 Ala Leu Asp Asn Leu Pro Glu Gly Phe Thr Cys Pro Ala Asp Arg Val  
 115 120 125  
 Lys Pro Trp Gly Thr Asn His Ala Val Leu Met Gly Lys Asp Val Ile  
 130 135 140  
 Lys Glu Pro Phe Ala Val Ile Asn Ala Asp Asp Phe Tyr Gly Arg Asp  
 145 150 155 160  
 Ser Phe Ala Val Leu Gly Ala Glu Leu Ser Gln Met Asp Gly Lys Lys  
 165 170 175  
 Asn Asp Tyr Cys Met Val Gly Tyr Arg Val Gly Asn Thr Leu Ser Glu  
 180 185 190  
 Ser Gly Ser Val Ala Arg Gly Val Cys Glu Thr Asn Ala Glu Gly Tyr  
 195 200 205  
 Leu Thr Thr Val Val Glu Arg Thr Ala Ile Glu Arg Ile Asp Gly Lys  
 210 215 220  
 Val Ser Phe Lys Asp Glu Asn Gly Glu Met Gln Thr Ile Gly Asp Asn  
 225 230 235 240  
 Thr Pro Val Ser Met Asn Met Trp Gly Phe Thr Pro Asp Tyr Phe Ala  
 245 250 255  
 Tyr Ser Glu Glu Tyr Phe Lys Glu Phe Leu Lys Glu Asn Glu Gly Asn  
 260 265 270  
 Leu Lys Ser Glu Tyr Phe Ile Pro Leu Met Val Asn Lys Leu Val Asn  
 275 280 285  
 Glu Gly Thr Ala Arg Val Lys Val Leu Asp Thr Thr Ser Lys Trp Phe  
 290 295 300  
 Gly Val Thr Tyr Ala Ala Asp Arg Gln Gly Val Val Asp Lys Ile Gln  
 305 310 315 320  
 Ala Leu Val Asp Ala Gly Glu Tyr Pro Asp Lys Leu Phe  
 325 330

&lt;210&gt; 8207

&lt;211&gt; 256

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8207

Gln Ile Met Lys Thr Glu Leu Lys Gly Trp Leu Ala Asp Asn Thr Val  
 1 5 10 15  
 Thr Thr Asp Asn Lys Glu Asp Lys Ile Leu Val Leu Glu Ser Ala Gly  
 20 25 30  
 Asn Leu Thr Leu Ser Asp Val Leu Asp Glu Met Lys Lys Glu Asp Thr  
 35 40 45  
 Gly Leu Arg Ala Glu Thr Leu Lys His Ala Val Asp Leu Phe Gln Arg  
 50 55 60  
 Thr Val Ser Glu Leu Val Leu Asn Gly Tyr Ser Val Asn Thr Gly Leu  
 65 70 75 80

Phe	Arg	Ala	Val	Pro	Gln	Phe	Arg	Gly	Val	Ile	Asp	Gly	Gly	Val	Trp
				85					90					95	
Asn	Ser	Glu	Lys	Asn	Ser	Ile	Tyr	Val	Ser	Phe	Asn	Gln	Asp	Lys	Asp
			100					105					110		
Leu	Arg	Glu	Thr	Ile	Ala	Arg	Thr	Gly	Val	Lys	Ile	Leu	Gly	Ala	Lys
			115					120					125		
Gly	Asp	Ser	Ala	Tyr	Phe	Ile	Gly	Gly	Glu	Asp	Ala	Ala	Thr	Arg	Ala
			130				135				140				
Thr	Asp	Gly	Ser	Ala	Thr	Ala	Gly	Arg	Asn	Tyr	Arg	Leu	Gln	Gly	Lys
						150				155					160
Asn	Ile	Lys	Val	Thr	Gly	Thr	Asp	Pro	Ala	Val	Gly	Ile	Val	Leu	Ile
				165					170					175	
Asp	Glu	Lys	Gly	Thr	Glu	Thr	Lys	Leu	Pro	Met	Asp	Met	Ile	Ala	Val
			180					185					190		
Asn	Asn	Pro	Ser	Glu	Val	Leu	Val	Leu	Leu	Pro	Ala	Asp	Leu	Lys	Asp
			195					200				205			
Gly	Ile	Tyr	Glu	Leu	Arg	Leu	Thr	Thr	Gln	Tyr	Cys	His	Ser	Ser	Gln
			210				215				220				
Thr	Met	Leu	Lys	Thr	Pro	Arg	Thr	Val	Ser	Arg	Phe	Ile	Asn	Ile	Gly
					230					235					240
Ala	Ser	Gln	Gly	Ser	Gly	Asp	Asp	Asp	Ile	Val	Asp	Asp	Pro	Thr	Ala
				245					250					255	

&lt;210&gt; 8208

&lt;211&gt; 726

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8208

Arg	Leu	Lys	Trp	His	Tyr	Asn	Ser	Ala	Tyr	Asp	Ala	Val	Asn	Arg	Leu
1				5					10					15	
Ala	Thr	Phe	Ala	Asp	Ile	Asp	Leu	Val	Tyr	Ala	His	Asn	Asp	Val	Met
			20					25					30		
Ala	Leu	Ala	Ala	Arg	Asp	Val	Ile	Met	Lys	Arg	Asp	Ser	Val	Ser	Gly
			35				40					45			
Lys	Arg	Ile	Arg	Phe	Ile	Gly	Ile	Asp	Gly	Val	Tyr	Gly	Asp	Gly	Ala
			50			55				60					
Gly	Leu	Gln	Ala	Val	Ala	Asp	Glu	Lys	Leu	Glu	Ala	Ser	Phe	Gln	Tyr
			65		70				75					80	
Pro	Thr	Gly	Gly	Ala	Ile	Ser	Ile	Gln	Val	Ala	Met	Gln	Ile	Ile	Asn
				85				90					95		
Gly	Glu	Lys	Val	Lys	Lys	Asn	Tyr	Val	Leu	Asn	Thr	Ala	Ile	Ile	Asn
			100				105						110		
Arg	Gly	Asn	Ala	Lys	Thr	Ile	Leu	Ala	Gln	Ser	Glu	Gln	Leu	Asn	His
			115				120					125			
Tyr	Gln	Lys	Arg	Ile	Asn	Arg	Gln	Lys	Gln	Glu	Glu	Asp	Asn	Leu	Leu
			130			135					140				
Ser	Arg	Phe	Lys	Phe	Leu	Arg	Asn	Ser	Thr	Ile	Leu	Ile	Leu	Ala	Leu
					150				155					160	
Met	Leu	Leu	Ile	Ile	Pro	Leu	Leu	Gly	Tyr	Val	Met	Tyr	Met	Asn	Leu
				165				170						175	
Arg	Val	Lys	Asn	Lys	Asn	Lys	Glu	Leu	His	Asp	Lys	Asn	Gln	Leu	Val
			180				185						190		
Glu	Ala	Gln	Lys	Glu	Glu	Leu	Ala	Val	Lys	Asn	Ser	Gln	Ile	Glu	Asn
			195				200					205			
Ile	Ser	Asn	Gln	Lys	Leu	Gln	Phe	Phe	Thr	Asn	Ile	Ser	His	Glu	Ile
			210			215					220				
Arg	Thr	Pro	Leu	Thr	Leu	Ile	Leu	Gly	Pro	Val	Asn	Lys	Leu	Ile	Lys
				230					235					240	

Asn	Ser	Lys	Leu	Asp	Pro	Ser	Ile	Gln	Glu	Asp	Val	Ala	Leu	Met	Lys
				245					250					255	
Arg	Asn	Val	Asp	Arg	Leu	Tyr	Arg	Ile	Val	Asn	Gln	Ile	Leu	Asp	Phe
			260					265					270		
Arg	Arg	Ile	Asp	Asn	Asp	Lys	Met	Lys	Leu	Ile	Leu	Arg	Gln	Val	Asp
		275				280						285			
Leu	Ile	Gly	Met	Val	Arg	Glu	Val	Phe	Asp	Tyr	Phe	Thr	Gly	Ile	Ala
	290					295					300				
Glu	Glu	Lys	Gln	Ile	His	Tyr	Arg	Phe	Ser	Thr	Asn	Ile	Asp	Glu	Leu
305				310						315				320	
Asn	Ile	Tyr	Ile	Asp	Val	Asn	Lys	Ile	Glu	Gln	Val	Leu	Val	Asn	Ile
			325						330					335	
Ile	Ser	Asn	Ala	Phe	Lys	Tyr	Ser	Asp	Ser	Gly	Gly	Asp	Ile	Ser	Val
		340						345					350		
Arg	Ile	Thr	Gly	Glu	Ala	Glu	Thr	Val	Leu	Leu	Glu	Val	Glu	Asp	His
	355						360					365			
Gly	Arg	Gly	Ile	Ser	Lys	Glu	Ser	Met	Glu	His	Leu	Phe	Glu	Arg	Phe
	370					375					380				
Tyr	Thr	Gly	Asn	Lys	Thr	Phe	Gly	Thr	Val	Gly	Phe	Gly	Ile	Gly	Leu
385				390						395				400	
Asn	Leu	Ser	Lys	Glu	Tyr	Val	Asp	Leu	His	Asp	Gly	Glu	Ile	Arg	Ala
			405					410					415		
Glu	Ser	Gln	Pro	Gly	Glu	Tyr	Thr	Leu	Phe	Ser	Val	Arg	Leu	Tyr	Lys
		420						425					430		
Asp	Ile	Ala	His	Tyr	Thr	His	Glu	Tyr	Ile	Leu	Glu	Glu	Thr	Asp	Arg
	435						440					445			
Phe	Asn	Leu	Ser	Tyr	His	Asp	Met	Glu	Val	Asp	Thr	Thr	Val	Val	Asn
	450					455				460					
Glu	Met	Leu	Ser	Lys	Thr	Tyr	Asp	Tyr	His	Val	Leu	Val	Val	Glu	Asp
465				470						475				480	
Asp	Pro	Asp	Val	Arg	Tyr	Ser	Leu	Arg	Lys	Glu	Leu	Ser	Ala	Asn	Phe
			485					490					495		
Gln	Val	Glu	Val	Ala	Gly	Asn	Gly	Asn	Glu	Ala	Leu	Asp	Leu	Leu	Gly
		500					505						510		
Gln	Gly	Asp	Ala	Phe	His	Leu	Ile	Leu	Ser	Asp	Val	Leu	Met	Pro	Gly
	515						520					525			
Met	Asn	Gly	Phe	Gln	Leu	Val	Asn	Arg	Val	Lys	Asn	Asp	Leu	Ala	Phe
	530				535					540					
Ser	His	Ile	Pro	Ile	Ile	Leu	Leu	Thr	Ala	Leu	Ser	Glu	Asp	Ser	Gln
545				550						555				560	
Arg	Ile	Tyr	Gly	Ile	Ala	Glu	Gly	Ala	Asp	Glu	Tyr	Ile	Pro	Lys	Pro
			565					570					575		
Phe	Asn	Ile	Asp	Phe	Leu	Lys	Ile	Arg	Ile	Ile	Asn	Met	Ile	Ser	Glu
		580						585					590		
Arg	Gln	Lys	Met	Lys	Glu	Ala	Tyr	Met	Lys	Asn	Leu	Arg	Ala	Gly	Thr
		595					600					605			
Met	Asp	Asn	Val	Glu	Val	Cys	Lys	Leu	Met	Lys	Val	Asp	Glu	Leu	Phe
	610					615					620				
Arg	Asp	Lys	Leu	Leu	Ser	Ile	Val	Asp	Thr	Gln	Tyr	Glu	Asn	Ser	Asp
625				630						635				640	
Phe	Ser	Ile	Glu	Asp	Leu	Ser	Glu	His	Leu	Gly	Leu	Ser	Arg	Val	His
			645					650					655		
Leu	Tyr	Arg	Lys	Met	Lys	Thr	Leu	Phe	Gly	Val	Ser	Pro	Thr	Asp	Tyr
		660					665						670		
Leu	Arg	Asn	Tyr	Arg	Leu	Asn	Lys	Ala	Met	Leu	Leu	Leu	Lys	Ala	Arg
		675				680						685			
Gln	Tyr	Asn	Ile	Ser	Glu	Ile	Ala	Tyr	Met	Thr	Gly	Phe	Thr	Ser	Pro
	690					695					700				
Ala	Tyr	Phe	Thr	Lys	Cys	Phe	Arg	Thr	Leu	Tyr	Gly	Val	Thr	Pro	Thr

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720

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Tyr 1	Met	Asn	Arg	Thr 5	Phe	Ile	Met	Arg	Glu 10	Cys	Leu	Gly	Lys	Ala 15	Leu
Trp	Leu	Cys	Phe 20	Cys	Leu	Ser	Ile	Ala 25	Gly	Cys	Ala	Glu	Asp 30	Asp	Arg
Met	Thr	Pro 35	Leu	Ser	Ala	Asp	Ser 40	Gly	Asp	Thr	Ala	Asp 45	Glu	Leu	Ile
Pro	Ile 50	His	Ile	Ser	Leu	Thr 55	Gly	Asp	Asn	Asp	Tyr 60	His	Ser	Ser	Ser
Phe 65	Asn	Asn	Ala	Ser	Thr 70	Arg	Ser	His	Ser	Pro 75	Leu	Ile	Ala	Glu	Trp 80
Val	Gly	Val	Lys 85	Ala	Phe	Ser	Pro	Thr 90	Arg	Thr	Gly	Glu	Gln 95	Pro	Asp
Tyr	Asp	Gly 100	Pro	Arg	Ile	Ala	Ser 105	Met	Glu	Leu	Thr	Glu 110	Asp	Thr	Leu
Pro	Arg	Val 115	Ser	Thr	Arg	Ala 120	Thr	Val	Pro	Ala	Gly	Val 125	Tyr	Phe	Arg
Leu	Ile 130	Val	Phe	Arg	Lys 135	Ser	Gly	Asn	Asn	Tyr 140	Val	Phe	Gln	Ser	Val
Ala 145	Asp	Tyr	Ala	Ser	Asn 150	Gly	Thr	Gly	Thr	Pro 155	Val	Leu	Lys	Gln	Gly 160
Lys	Leu	Leu	Thr 165	Arg	Ser	Gly	Thr	Ile 170	Arg	Met	Val	Gly	Tyr 175	Ser	Phe
Asn	Thr	Ala 180	Thr	Ala	Ala	Asp	Leu 185	Gly	Thr	Met	Leu	Ser 190	Thr	Tyr	Ala
Tyr	Asn 195	Ser	Ser	Thr	Val	Ser 200	Ile	Pro	Asn	Met	Ser	Lys 205	Asp	Phe	Met
Thr	Phe 210	Asp	Ser	Gly	Asp	Ile 215	Thr	Asn	Val	Asn	Ser 220	Leu	Ser	His	Asn
Leu 225	Pro	Val	Ser	Phe 230	Asn	Gln	Lys	Leu	Cys	Lys 235	Leu	Thr	Ile	Thr	Ile 240
Ser	Pro	Thr	Gly 245	Phe	Pro	Ser	Asn	Thr 250	Ile	Thr	Asn	Cys	Thr 255	Gly	Val
Tyr	Val	Lys 260	Gln	Gly	Gly	Asn	Ser 265	Thr	Ser	Trp	Lys	Ile 270	Gly	Pro	Ser
Thr	Asn 275	Val	Val	Ala	Thr	Asn 280	Thr	Asn	Asn	Thr	Ala 285	Ala	Phe	Ser	Pro
Ser	Thr 290	Ala	Leu	Ser	Thr	Thr 295	Ile	Arg	Met	Val 300	Pro	Phe	Ala	Gly	Ala
Arg 305	Thr	Ile	Thr	Val 310	His	Phe	Asn	Thr	Leu	Thr 315	Val	Gly	Gly	Arg	Ile 320
Val	Asn	Asn	Asn 325	Thr	Glu	Ile	Thr	Ser 330	Thr	Gln	Ser	Val	Gln 335	Leu	Lys
Glu	Gly	Lys 340	Ser	Tyr	Thr	Leu	Lys 345	Ile	Gln	Phe	Lys	Lys 350	Gly	Pro	Gly
Ile	Asn 355	Val	Leu	Glu	Ser	Asp 360	Ile	Asn	Leu	Thr 365	Gly	Asn	Gly	Cys	Thr
Ala	Gln 370	Asp	Lys	Lys	Asp 375	Leu	Ala	Lys	Leu	Ile 380	Trp	Ala	Asp	Gly	Asn
Leu	Lys	Ser	Thr	Gly	Asn	Ser	Asn	Tyr	Val	Trp	Thr	Thr	Ser	Thr	Asp

385                      390                      395                      400  
 Arg Gly Tyr Tyr Tyr Thr Trp Tyr Ser Thr Tyr Thr Gly Asn Thr Ser  
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 Gln Asn Asn Thr Asp Pro Cys Ser Lys Leu Asn Val Ser Thr Tyr Gly  
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 Thr Gly Trp Arg Thr Pro Ser Arg Asn Glu Leu Thr Lys Leu Ser Arg  
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 Cys Thr Asn Lys Ala Lys Val Asn Asn Gly Met Trp Phe Met Asn Ser  
                                  450                      455                      460  
 Ser Lys Gly Leu Phe Leu Pro Leu Ala Gly His Thr Pro Ser Ala Ser  
 465                      470                      475                      480  
 Gly Ala Ser Thr Gly Gly Asn Ala Val Val Asn Gly Asn Arg Asp Gly  
                                  485                      490                      495  
 Asn Tyr Trp Cys Thr Glu Lys Tyr Tyr Arg Phe Leu Phe Gly Thr Asn  
                                  500                      505                      510  
 Gly His Thr Val Ser Asp Ala Ala Ser Gly Ala Phe Gly Cys Ser Val  
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 Arg Cys Val Lys Gly Thr Lys Gln  
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                                  20                      25                      30  
 Leu Cys Lys Phe Phe Tyr Ile Val Leu Ile Ile Ser His Leu Ser Ile  
                                  35                      40                      45  
 Leu Leu Ala Phe Ser Ala Glu Ser Lys Asn Ser Val Ser Lys Asp Val  
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 Arg Leu Leu Lys His Arg Leu Lys Asn  
 65                      70

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                                  20                      25                      30  
 Val Ile Val Leu Ala Pro Ala Asn Gly Thr Met Arg Met Val Val Leu  
                                  35                      40                      45  
 Arg Ala Val Leu Gly Leu Asn Ala Ala Val Leu Phe Val Leu Val Ala  
                                  50                      55                      60  
 Thr Thr Leu Val Glu Gly Pro Ile Phe His Asp Val Glu Phe Pro Pro  
 65                      70                      75                      80  
 Cys Phe Thr Tyr Thr Pro Val Gln Leu Val Ile Val Leu Leu Gly Asn  
                                  85                      90                      95  
 Pro Val Gly Leu Met Val Ile Val Ser Leu His Asn Phe  
                                  100                      105

<210> 8212

[illegible]

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<211> 431
<212> PRT
<213> B.fragilis
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Gly	Gly	Ile	Phe	Ser	Ile	Met	Glu	Lys	Phe	Asp	Ser	Met	Leu	Ser	Pro
			20					25					30		
Val	Ile	Asp	Ser	Thr	Leu	Gly	Gln	Arg	Cys	Ser	Ser	Ile	Phe	Gly	Tyr
		35				40						45			
Gln	Phe	Ser	Glu	Ile	Val	Arg	Ser	Leu	Met	Ser	Val	Tyr	Phe	Cys	Gly
	50				55					60					
Gly	Ser	Cys	Val	Glu	Asp	Val	Thr	Ser	Gln	Leu	Met	Arg	His	Leu	Ser
65				70						75				80	
Tyr	His	Pro	Thr	Leu	Arg	Thr	Cys	Ser	Ser	Asp	Thr	Ile	Leu	Arg	Ala
				85					90					95	
Ile	Lys	Glu	Leu	Thr	Gln	Glu	Asn	Ile	Ser	Tyr	Thr	Ser	Asp	Gln	Gly
			100					105					110		
Lys	Thr	Tyr	Asp	Phe	Asn	Thr	Ala	Asp	Lys	Leu	Asn	Thr	Leu	Leu	Ile
		115					120					125			
Asn	Ala	Leu	Val	Ser	Thr	Gly	Glu	Leu	Lys	Glu	Ile	Glu	Glu	Tyr	Asp
	130					135					140				
Val	Asp	Phe	Asp	His	Gln	Phe	Leu	Glu	Thr	Glu	Lys	Tyr	Asp	Ala	Lys
145				150						155				160	
Pro	Thr	Tyr	Lys	Lys	Phe	Leu	Gly	Tyr	Arg	Pro	Gly	Val	Tyr	Val	Ile
			165						170					175	
Gly	Asp	Lys	Ile	Val	Tyr	Ile	Glu	Asn	Ser	Asp	Gly	Asn	Thr	Asn	Val
			180					185					190		
Arg	Phe	His	Gln	Ala	Asp	Thr	His	Lys	Arg	Phe	Phe	Ala	Leu	Leu	Glu
	195					200						205			
Ser	Gln	Asn	Ile	Arg	Val	Asn	Arg	Phe	Arg	Ala	Asp	Cys	Gly	Ser	Cys
	210					215					220				
Ser	Lys	Glu	Ile	Val	Ser	Glu	Ile	Glu	Lys	His	Cys	Lys	His	Phe	Tyr
225				230						235				240	
Ile	Arg	Ala	Asn	Arg	Cys	Ser	Ser	Leu	Tyr	Asn	Asp	Ile	Phe	Ala	Leu



[illegible]

<400> 8214

<210> 8215

<400> 8215

His 1	His	Lys	His	Ile 5	Asn	Asn	Ser	Val	Ser 10	Thr	Ser	Trp	Leu	Phe 15	Gly
Ile	Leu	Leu	Glu 20	Thr	Leu	Phe	Val	Lys 25	Thr	Arg	Thr	Arg	Met 30	Ile	Arg
His	Tyr	Phe	Lys 35	Ile	Ala	Phe	Arg 40	Asn	Leu	Leu	Lys 45	Tyr	Lys	Thr	Gln
Ser	Ile 50	Ile	Ser	Ile	Ile	Gly 55	Leu	Ala	Val	Gly	Ile 60	Thr	Cys	Phe	Ala
Leu 65	Ala	Thr	Leu	Trp 70	Ile	Arg	Tyr	Glu	Met 75	Thr	Tyr	Asp	Thr	Phe 80	His
Arg	Arg	Ala	Asp 85	Asp	Ile	Tyr	Leu	Val 90	Arg	Ala	Gln	Leu	Thr 95	Ile	Thr

Asp Gly Thr Leu Ser Asn Ser Met Pro Tyr Pro Ala Ile Glu Tyr Leu  
 100 105 110  
 Arg Lys Asn Ile Ser Glu Ile Glu Asp Ile Cys Gly Ile Ser Pro Phe  
 115 120 125  
 Lys Thr Asn Leu Arg Phe Lys Asp Lys Gly Gly Asp Leu Leu Ala Ile  
 130 135 140  
 Glu Val Asp Ser Ala Phe Ile Arg Met Phe Asp Val Arg Ile Leu Gln  
 145 150 155 160  
 Gly Asn Val Asn Phe Leu Lys Lys Lys Ser Asn Glu Ile Ala Ile Thr  
 165 170 175  
 Glu Ala Val Ala Lys Glu Trp Phe Gly Asn Glu Ser Pro Leu Gly Lys  
 180 185 190  
 Glu Ile Glu Leu Gly Ser Arg Pro Cys Lys Val Cys Ala Val Val Ser  
 195 200 205  
 Gly Trp Ser Gln His Ser Asn Leu Ser Tyr Gly Ala Leu Leu Pro Ala  
 210 215 220  
 Arg His His Pro Ser Trp Gln Ser Asn Ser Glu Gln Ile Phe Val Arg  
 225 230 235 240  
 Ile Leu Pro Asp Thr Asp Lys Ser Ala Leu Gln Lys Arg Ile Ser Ser  
 245 250 255  
 Leu Asp Ala Ser Ser Gln Glu Lys Glu Ser Thr Leu Gly Lys Leu Asn  
 260 265 270  
 Phe Thr Pro Ile Thr Ser Leu Arg Tyr Ser Asp Tyr Leu Gln Lys Asp  
 275 280 285  
 Glu Ile Val Ile Ser Phe Asn Tyr Ile Arg Tyr Phe Ala Met Ala Gly  
 290 295 300  
 Val Leu Val Ile Val Cys Ser Leu Phe Asn Tyr Leu Thr Leu Phe Val  
 305 310 315 320  
 Ser Arg Leu Arg Met Arg Gly Arg Glu Leu Gly Leu Arg Lys Val Cys  
 325 330 335  
 Gly Ser Thr Asn Arg Ser Leu Phe Ala Leu Leu Ser Val Glu Tyr Leu  
 340 345 350  
 Ile Val Leu Leu Ala Gly Ser Leu Leu Gly Met Ala Phe Ile Glu Ala  
 355 360 365  
 Cys Leu Pro His Phe Ile Glu Leu Ala Gln Ile Ser Glu Ala Thr Pro  
 370 375 380  
 Leu Tyr Thr Glu Val Ile Ile Tyr Ile Leu Ala Val Ile Val Leu Ser  
 385 390 395 400  
 Phe Gly Ile Ser Gln Ile Pro Leu Tyr Tyr Phe Arg Ser Arg Thr Leu  
 405 410 415  
 Gln Ser Ser Ile Arg Asn Lys Lys Gly Ser Pro Gln Arg Gly Ile Phe  
 420 425 430  
 Arg Arg Leu Gly Leu Ile Ala Gln Leu Ile Ile Ser Leu Gly Phe Ile  
 435 440 445  
 Phe Cys Thr Thr Ile Met Met Lys Gln Leu Tyr Tyr Leu Lys Asn Thr  
 450 455 460  
 Asp Leu Gly Ile Glu Arg His Asn Ile Gly Asn Val Ala Val Trp Met  
 465 470 475 480  
 Lys Gly Asp Ile Asn Glu Trp Ser Ser Lys Ile Ala Asn Leu Pro Met  
 485 490 495  
 Val Thr Glu Ala Leu Pro Pro His Tyr Phe Pro Ile Val Pro Thr Gly  
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 Pro Met Met Tyr Thr Asp Ile Asn Gly Trp Asp Gly Leu Asn Glu Thr  
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 Thr Asp Glu Thr Tyr Ser Val Gly Leu Ile Pro Ser Gly Lys Glu Phe  
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 Phe Asp Phe Tyr Gly Leu Gln Leu Thr Glu Gly Glu Trp Leu Ser Glu  
 545 550 555 560  
 Lys Asn Ser Pro Gly Asp Val Ile Ile Asn Glu Thr Ala Ala Leu Thr

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Phe	Gly	Trp	Arg	Asn	Pro	Val	Gly	Lys	Gln	Phe	Tyr	Ser	Glu	Tyr	Glu		
			580					585					590				
His	Asn	Arg	Thr	Tyr	Tyr	Thr	Val	Val	Gly	Val	Val	Lys	Asp	Phe	Ser		
		595					600					605					
Tyr	Leu	Pro	Pro	Thr	Ile	Ala	Pro	Arg	Pro	Leu	Ala	Phe	Val	Arg	Thr		
	610					615					620						
Glu	Glu	Gln	Lys	Tyr	Leu	Trp	Ser	Arg	Ala	Ser	Ile	Leu	Phe	Lys	Phe		
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Thr	Glu	Gly	Ser	Trp	Glu	Ala	Cys	Lys	Asp	Thr	Ile	Arg	Lys	Met	Lys		
			645						650					655			
Glu	Glu	Asp	Phe	Pro	Ser	Ser	Phe	Leu	Arg	Leu	Tyr	Asn	Glu	Glu	Glu		
		660						665					670				
Glu	Tyr	Asn	Lys	Pro	Lys	Ile	Arg	Asn	Tyr	His	Pro	Ile	His	Asp			
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&lt;211&gt; 83

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8216

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		20						25				30					
Thr	Trp	Gln	Lys	Tyr	Lys	Leu	Asn	Leu	Arg	Asn	Ser	His	Leu	Leu	Glu		
	35					40					45						
Glu	Phe	Phe	Gln	Ser	Trp	Arg	Asn	Leu	Thr	Pro	Cys	Phe	His	Pro	Leu		
	50					55				60							
Ser	Thr	Gln	His	Trp	Val	Arg	Asp	Ala	Ala	Val	Ser	Ser	Asp	Ile	Ser		
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Ser	Ala	Arg															

&lt;210&gt; 8217

&lt;211&gt; 837

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8217

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Leu	Cys	Tyr	Ser	Val	Val	Asn	Gln	Thr	Gln	Asn	His	Thr	Asn	Met	Lys		
		20						25				30					
Thr	Ile	Arg	Leu	Ala	Trp	Lys	Ala	Leu	Ala	Arg	Phe	Arg	Thr	Tyr	Thr		
	35					40					45						
Phe	Ile	Asn	Ile	Leu	Gly	Leu	Ala	Leu	Ser	Leu	Ala	Cys	Val	Leu	Ile		
	50				55					60							
Ile	Leu	Arg	Tyr	Ile	His	Gln	Glu	Val	Thr	Val	Asn	His	Phe	Cys	Lys		
65					70					75				80			
Asp	Leu	Glu	Asn	Thr	Tyr	Leu	Leu	Tyr	Ile	Glu	Tyr	Glu	Asp	Gly	Arg		
			85					90				95					
Arg	Thr	Ile	Ser	Ser	Asn	Glu	Asp	Arg	Asn	Asn	Asp	Pro	Asn	Phe	Ile		
		100						105				110					
Asp	Pro	Leu	Asn	Asp	Pro	Ser	Val	Leu	Lys	Ser	Thr	Arg	Trp	Ile	Asn		
	115						120					125					
Phe	Pro	Glu	Asp	Arg	Ile	Thr	Val	Gly	Lys	Gln	Ile	Tyr	Asn	Val	Lys		
	130					135					140						

Thr Val Val Thr Asp Ser Val Phe Leu Gln Ile Leu Pro Tyr Pro Ser  
 145 150 155 160  
 Val Ser Gly Ile Ser Ser Leu Lys Ser Pro Asn Asp Ala Ile Ile Thr  
 165 170 175  
 Arg Arg Leu Ala Glu Arg Leu Phe Gly Lys Glu Asn Pro Ile Gly Lys  
 180 185 190  
 Thr Met Thr Tyr Ser Thr Gly Asp Ile Val Thr Val Thr Gly Val Ile  
 195 200 205  
 Gly Glu Pro Thr Thr Lys Ser Phe Leu Asp Phe Asp Leu Ile Ile Ser  
 210 215 220  
 Glu Arg Leu Gln His Ser Trp Ser Arg Leu Ser Asn Ser Leu Val Gln  
 225 230 235 240  
 Leu Ile Pro Gly Thr Asp Phe Lys Lys Leu Asn Val Lys Asn Glu Lys  
 245 250 255  
 Phe Met Lys Leu Arg Cys His Met Asp Ala Pro Thr Arg Leu Gln Phe  
 260 265 270  
 Phe Pro Leu Lys Asp Phe Tyr Phe Asp Lys Thr Val Arg Val Tyr Asn  
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 290 295 300  
 Val Thr Ile Ala Leu Leu Ile Ile Gly Leu Phe Asn Phe Ile Asn Ile  
 305 310 315 320  
 Tyr Thr Val Met Met Leu Lys Arg Ala Arg Glu Phe Gly Val Lys Lys  
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 Glu Ile Thr Gly Gly Met Met Glu His Val Leu Arg Ile Pro Gln Thr  
 370 375 380  
 Ser Asn Thr Glu Phe Ser Ala Thr Leu Ser Val Gly Ile Leu Ile Leu  
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 Leu Pro Leu Leu Thr Ser Ile Tyr Pro Phe Ile Arg Tyr Asn Tyr Val  
 405 410 415  
 Ser Pro Ser Val Ser Ile Arg Ser Val Asn Ala Gly Gly His Ser Ile  
 420 425 430  
 Val Ser Arg Val Leu Phe Leu Phe Val Gln Tyr Ile Ile Thr Phe Val  
 435 440 445  
 Leu Ile Ile Val Ser Leu Phe Phe Thr Lys Gln Val Arg Phe Met Leu  
 450 455 460  
 Ser Ala Asp Leu Asn Tyr Thr Thr Lys Asp Ile Ile Gln Cys Gln Leu  
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 Tyr Ala Glu Arg Ser Ser Tyr Asp Ile Asn Ile Ser Asp Glu Glu Trp  
 485 490 495  
 Glu Arg Arg Lys Gln Arg Glu Lys Ser Asn Leu Ala Tyr Ile Lys Glu  
 500 505 510  
 Glu Met Asp His Ser Pro Leu Phe Ile Arg Trp Glu Tyr Gly Glu Asn  
 515 520 525  
 Pro Asn Gln Leu Asp Asp Asn Tyr Ile Asn Val Arg Asn Ala Gln Arg  
 530 535 540  
 Asp Glu Phe Lys Gln Val Ile Tyr Ser Ser Leu Ser Asn Lys Tyr Ile  
 545 550 555 560  
 Glu Leu Phe Gly Phe Gln Leu Lys Glu Gly Arg Leu Trp Asn Asp Ser  
 565 570 575  
 Val Asp Gln Trp Thr Asp Tyr Lys Met Ile Ile Asn Glu Ser Ala Lys  
 580 585 590  
 Ser Leu Leu Glu Ile Asp Asn Ile Glu Thr Ala Leu Ile Gln Pro Glu  
 595 600 605  
 Arg Arg Leu Trp Trp Ser Leu Ser Lys Ser Glu Glu Met Lys Lys Asn

145 150 155 160 165 170 175 180 185 190 195 200 205 210 215 220 225 230 235 240 245 250 255 260 265 270 275 280 285 290 295 300 305 310 315 320 325 330 335 340 345 350 355 360 365 370 375 380 385 390 395 400 405 410 415 420 425 430 435 440 445 450 455 460 465 470 475 480 485 490 495 500 505 510 515 520 525 530 535 540 545 550 555 560 565 570 575 580 585 590 595 600 605

610	615	620
Pro Pro Tyr Gln Val Ile Gly Val Ile Lys Asp Phe Lys Ile Gly His		
625	630	635
Leu Ser Lys Thr Thr Pro Pro Leu Phe Ile Val Tyr Glu Asp Pro Arg		
	645	650
Gly Ser Tyr Arg Asp Arg Leu Met Ala Gln Ile Val Pro Gly Lys Lys		
	660	665
Gln Glu Ala Ile Ala Phe Leu Lys Lys Leu Arg Asp Glu Ile Leu Gly		
	675	680
Glu Gly Glu Phe Glu Tyr Ser Phe Leu Glu Asp Glu Ile Ala Thr Met		
	690	695
Tyr Gln Glu Asp Lys Arg Thr Ala Glu Ile Tyr Ser Leu Phe Ser Ile		
705	710	715
Ile Ala Ile Leu Ile Ser Cys Leu Gly Leu Phe Gly Leu Ser Met Phe		
	725	730
Asp Ile Arg Gln Arg Tyr Arg Glu Ile Ala Leu Arg Lys Val Asn Gly		
	740	745
Ala Thr Leu Lys Glu Ile Tyr Pro Leu Leu Leu Lys Lys Tyr Ser Ile		
	755	760
Ile Leu Gly Met Ala Phe Ile Ile Ser Ala Pro Leu Ser Trp Tyr Ile		
	770	775
Ile Ser Lys Tyr Leu Glu Gly Phe Ala Asn Lys Ala Pro Ile Ser Trp		
785	790	795
Trp Leu Phe Ala Ile Ala Ala Ile Val Thr Ala Phe Ile Ser Leu Ala		
	805	810
Thr Leu Ile Trp Gln Ile Arg Lys Ala Ala Asn Ile Asn Pro Ala Lys		
	820	825
Val Leu Lys Gly Glu		830
	835	

&lt;210&gt; 8218

&lt;211&gt; 85

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8218

Glu Thr Ser Lys Ser Gln Pro Ile Leu Phe Ser Tyr Asp Thr Ala His	
1	5
Ser Ser Leu Glu Val Thr Ser Thr Val Cys Pro Val Pro Thr Phe Thr	
	20
Ser Asp Ser Glu Asp Leu Phe Thr Glu Arg Ala Asp Ala Pro Ala Ala	
	35
His Leu Asn Trp His Leu Thr Ile Phe Pro Ala Leu Ser Val Thr Ser	
	50
Thr Leu Gly Ala Asn Gly Val Gly Asn Gly Leu Arg Ala Ile Ser Ser	
65	70
Leu Met Glu Asn Ala	
	85

&lt;210&gt; 8219

&lt;211&gt; 148

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8219

Asn Tyr Ile Asp Met Lys Leu Ile Ile Tyr Asn Ser Arg Leu Ala Lys	
1	5
Arg Met Leu Phe Pro Gly Tyr Ser Thr Ile Met Leu Phe Gly Ile Ile	
	20
	25
	30

1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	2101	2102	2103	2104	2105	2106	2107	2108	2109	2110	2111	2112	2113	2114	2115	2116	2117	2118	2119	2120	2121	2122	2123	2124	2125	2126	2127	2128	2129	2130	2131	2132	2133	2134	2135	2136	2137	2138	2139	2140	2141	2142	2143	2144	2145	2146	2147	2148	2149	2150	2151	2152	2153	2154	2155	2156	2157	2158	2159	2160	2161	2162	2163	2164	2165	2166	2167	2168	2169	2170	2171	2172	2173	2174	2175	2176	2177	2178	2179	2180	2181	2182	2183	2184	2185	2186	2187	2188	2189	2190	2191	2192	2193	2194	2195	2196	2197	2198	2199	2200	2201	2202	2203	2204	2205	2206	2207	2208	2209	2210	2211	2212	2213	2214	2215	2216	2217	2218	2219	2220	2221	2222	2223	2224	2225	2226	2227	2228	2229	2230	2231	2232	2233	2234	2235	2236	2237	2238	2239	2240	2241	2242	2243	2244	2245	2246	2247	2248	2249	2250	2251	2252	2253	2254	2255	2256	2257	2258	2259	2260	2261	2262	2263	2264	2265	2266	2267	2268	2269	2270	2271	2272	2273	2274	2275	2276	2277	2278	2279	2280	2281	2282	2283	2284	2285	2286	2287	2288	2289	2290	2291	2292	2293	2294	2295	2296	2297	2298	2299	2300	2301	2302	2303	2304	2305	2306	2307	2308	2309	2310	2311	2312	2313	2314	2315	2316	2317	2318	2319	2320	2321	2322	2323	2324	2325	2326	2327	2328	2329	2330	2331	2332	2333	2334	2335	2336	2337	2338	2339	2340	2341	2342	2343	2344	2345	2346	2347	2348	2349	2350	2351	2352	2353	2354	2355	2356	2357	2358	2359	2360	2361	2362	2363	2364	2365	2366	2367	2368	2369	2370	2371	2372	2373	2374	2375	2376	2377	2378	2379	2380	2381	2382	2383	2384	2385	2386	2387	2388	2389	2390	2391	2392	2393	2394	2395	2396	2397	2398</
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<400> 8220

Tyr	Asn	Met	Asp	Gln	Leu	Gly	Lys	Ile	Leu	Ile	Val	Gly	Asp	Asn	Glu
1				5					10					15	
Asp	Val	Leu	Phe	Ala	Leu	Asn	Leu	Leu	Leu	Glu	Pro	Tyr	Thr	Glu	Lys
			20					25					30		
Ile	Lys	Val	Ala	Thr	Thr	Pro	Asp	Arg	Ile	Glu	His	Phe	Met	Thr	Thr
		35					40					45			
Phe	Gly	Pro	Asp	Ile	Ile	Leu	Leu	Asp	Met	Asn	Phe	Ser	Arg	Asp	Ala
	50					55					60				
Ile	Ser	Gly	Gln	Glu	Gly	Phe	Glu	Ser	Leu	Glu	Gln	Ile	Leu	Lys	Ile
65					70					75				80	
Asp	Pro	Gln	Ala	Ile	Val	Ile	Phe	Met	Thr	Ala	Tyr	Ala	Asp	Thr	Asp
				85					90					95	
Lys	Ala	Val	Arg	Ala	Ile	Lys	Ala	Gly	Ala	Thr	Asp	Phe	Ile	Pro	Lys
			100					105					110		
Pro	Trp	Glu	Lys	Glu	Lys	Leu	Leu	Ala	Thr	Leu	Ser	Ser	Gly	Met	Lys
		115					120					125			
Leu	Arg	Gln	Ser	Arg	His	Glu	Val	Asn	Met	Leu	Lys	Glu	Gln	Val	Glu
	130					135						140			
Val	Leu	Ser	Gly	Gln	Gly	Gly	Pro	Glu	Asn	Glu	Ile	Ile	Gly	Glu	Ser
145					150					155				160	
Glu	Ala	Met	Gln	Glu	Val	Phe	Ser	Thr	Ile	Asn	Lys	Leu	Ser	Glu	Thr
				165					170					175	
Asp	Ala	Asn	Ile	Leu	Ile	Leu	Gly	Glu	Asn	Gly	Thr	Gly	Lys	Asp	Val
			180					185					190		
Ile	Ala	Arg	Leu	Leu	Tyr	Arg	Cys	Ser	Pro	Arg	Tyr	Gly	Lys	Pro	Phe
		195					200					205			
Val	Thr	Ile	Asp	Leu	Gly	Ser	Ile	Pro	Glu	Gln	Leu	Phe	Glu	Ser	Glu
	210					215					220				
Leu	Phe	Gly	Tyr	Glu	Lys	Gly	Ala	Phe	Thr	Asp	Ala	Arg	Lys	Ala	Lys
225					230					235				240	
Ala	Gly	Arg	Met	Glu	Val	Ala	Thr	Gly	Gly	Thr	Leu	Phe	Leu	Asp	Glu
				245					250					255	
Ile	Gly	Asn	Leu	Ser	Leu	Pro	Met	Gln	Ser	Lys	Leu	Leu	Thr	Ala	Ile
		260						265					270		
Glu	Lys	Arg	Gln	Ile	Ser	Arg	Leu	Gly	Ser	Thr	Gln	Ser	Val	Pro	Ile
		275					280					285			

Asp Val Arg Leu Ile Cys Ala Thr Asn Ala Asp Ile Arg Ala Met Val  
 290 295 300  
 Asp Glu Gly Asn Phe Arg Gln Asp Leu Leu Tyr Arg Ile Asn Thr Ile  
 305 310 315 320  
 Glu Ile His Ile Pro Pro Leu Arg Glu Arg Gly Asn Asp Val Ile Leu  
 325 330 335  
 Leu Ala Glu Phe Phe Leu Glu Arg Tyr Ala Arg Lys Tyr Lys Lys Glu  
 340 345 350  
 Met His Gly Leu Thr Arg Glu Ala Lys Asn Lys Leu Leu Lys Tyr Asn  
 355 360 365  
 Trp Pro Gly Asn Val Arg Glu Leu Gln His Thr Ile Glu Arg Ala Val  
 370 375 380  
 Ile Leu Gly Asp Gly Ser Leu Leu Lys Pro Glu Asn Phe Leu Phe His  
 385 390 395 400  
 Ser Ser Val Arg Gln Lys Lys Glu Glu Glu Val Leu Asn Leu Glu Leu  
 405 410 415  
 Leu Glu Arg Gln Ala Val Glu Lys Ala Met Arg Leu Ser Glu Gly Asn  
 420 425 430  
 Ile Thr Arg Ala Ala Glu Tyr Leu Gly Ile Thr Arg Phe Ala Leu Tyr  
 435 440 445  
 Arg Lys Leu Glu Lys Leu Gly Leu  
 450 455

<210> 8221  
 <211> 495  
 <212> PRT  
 <213> B.fragilis

<400> 8221

Lys Lys Lys Cys Thr Met Asn Leu Lys Thr Ile Leu Ile Ile Ala Gly  
 1 5 10 15  
 Cys Ser Tyr Ile Phe Pro Ala Thr Ala Gln Glu Arg Thr Met Glu Leu  
 20 25 30  
 Ser Leu Asp Glu Thr Val Lys Leu Ala Lys Leu Gln Ser Pro Asp Ala  
 35 40 45  
 Gln Thr Ala Arg His Ser Phe Arg Ser Ala Tyr Trp Asn Tyr Lys Tyr  
 50 55 60  
 Tyr Arg Ala Asn Tyr Leu Pro Ala Leu Ser Leu Thr Ser Asp Pro Asn  
 65 70 75 80  
 Leu Asn Arg Ala Ile Asn Lys Val Thr Leu Gly Asp Gly Thr Val Lys  
 85 90 95  
 Phe Val Glu Gln Asn Met Leu Ser Thr Asp Leu Thr Leu Asn Leu Thr  
 100 105 110  
 Gln Asn Ile Pro Trp Thr Gly Gly Ser Leu Phe Val Glu Thr Ala Ala  
 115 120 125  
 Gln Arg Met Asp Ile Phe Ser Asp His Thr Thr Ala Trp Gln Thr Ser  
 130 135 140  
 Pro Ile Asn Ile Gly Tyr Arg Gln Ser Leu Phe Gly Tyr Asn Ser Leu  
 145 150 155 160  
 Lys Trp Asp Arg Arg Ile Glu Pro Val Arg Tyr Arg Glu Ala Lys Lys  
 165 170 175  
 Ser Tyr Val Glu Thr Leu Glu Leu Val Ala Thr Arg Ala Thr Gln Lys  
 180 185 190  
 Phe Phe Asn Leu Ala Thr Ala Gln Ser Asn Tyr Glu Thr Ala Thr Thr  
 195 200 205  
 Asn Tyr Ala Asn Ala Asp Thr Leu Tyr Gln Tyr Ala Gln Gly Arg Tyr  
 210 215 220  
 Asn Ile Gly Thr Ile Thr Glu Asn Glu Met Leu Gln Leu Glu Leu Asn  
 225 230 235 240

Lys Leu Thr Glu Glu Thr Asn Arg Met Asn Ala Arg Ile Glu Met Asp  
 245 250 255  
 Asn Cys Met Gln Glu Leu Arg Ser Tyr Leu Gly Ile Gln Ser Asp Glu  
 260 265 270  
 Glu Leu Lys Val Lys Ile Asn Asp His Val Pro Asp Phe Ser Val Glu  
 275 280 285  
 Leu His Glu Ala Leu Leu Leu Ala Asn Glu Asn Ser Pro Glu Ile Gln  
 290 295 300  
 Asn Met Ile Arg Arg Lys Leu Glu Ser Glu Ser Asn Val Ser Tyr Ala  
 305 310 315 320  
 Arg Ala Asn Ala Gly Leu Lys Ala Asp Ile Tyr Leu Arg Phe Gly Leu  
 325 330 335  
 Thr Gln Thr Ala Asp Lys Leu Gly Ser Ala Tyr Lys Arg Pro Leu Asp  
 340 345 350  
 Gln Gln Tyr Val Ser Leu Ser Val Ala Leu Pro Ile Leu Asp Trp Gly  
 355 360 365  
 Arg Gly Lys Gly Lys Val Arg Val Ala Arg Ser Asn Arg Asp Leu Val  
 370 375 380  
 Tyr Thr Gln Val Glu Gln Asp Lys Thr Asp Phe Glu Leu Asn Ile Arg  
 385 390 395 400  
 Lys Leu Val Lys Gln Phe Asn Leu Gln Ala Gln Arg Val Arg Ile Ala  
 405 410 415  
 Ala Arg Thr Asp Glu Thr Ala Gln Arg Arg Ser Asp Val Ala Arg Lys  
 420 425 430  
 Leu Tyr Leu Leu Gly Lys Ser Thr Ile Leu Asp Leu Asn Ala Ser Ile  
 435 440 445  
 Thr Glu Lys Asp Gln Ala Arg Arg Asn Tyr Ile Thr Ala Leu Tyr Asn  
 450 455 460  
 Tyr Trp Ser Leu Tyr Tyr Thr Leu Arg Ser Leu Thr Leu Phe Asp Phe  
 465 470 475 480  
 Glu Gly Lys Thr Pro Leu Thr Glu Asn Tyr Asp Leu Leu Ile Asp  
 485 490 495

&lt;210&gt; 8222

&lt;211&gt; 153

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8222

His Asp Cys Arg Ile Pro Arg Lys Gln His Ala Phe Cys Lys Pro Ala  
 1 5 10 15  
 Val Ile Asn Asn Lys Phe His Val Asp Val Ile Leu Met Val Ala Ala  
 20 25 30  
 Lys Phe Ala Tyr Ser Phe Gln Gly Val Lys Asp Ile Leu Val Leu Met  
 35 40 45  
 Glu Leu Gly Lys Tyr Pro Gly Arg Gly Val Lys Ala Lys Arg Ile Lys  
 50 55 60  
 Thr Val Glu Ile Asn His Leu Ile Asn Tyr Lys Tyr Gly Lys Ser Lys  
 65 70 75 80  
 Leu Val Gln Cys Lys Pro His Val Gly Gln Glu Arg Trp Arg Phe Asp  
 85 90 95  
 Asn Gln Cys Gly Cys Ser His Arg Thr Cys Ser Thr Lys Tyr Ser Ser  
 100 105 110  
 Tyr Arg Asn Ser Gly Lys Arg Asn Glu Thr Leu Ser Gln Tyr Ser Gly  
 115 120 125  
 Ile Ser Gly Arg Cys Arg Gly Ile His Asn His Gly Tyr Lys Gln Thr  
 130 135 140  
 Gly Pro Ser Leu Phe Arg Arg Ser Arg  
 145 150



<210> 8223  
 <211> 74  
 <212> PRT  
 <213> B.fragilis

<400> 8223  
 His Asp Cys Arg Ile Pro Arg Lys Gln His Ala Phe Cys Lys Pro Ala  
 1 5 10 15  
 Val Ile Asn Asn Lys Phe His Val Asp Val Ile Leu Met Val Ala Ala  
 20 25 30  
 Lys Phe Ala Tyr Ser Phe Gln Gly Val Lys Asp Ile Leu Val Leu Met  
 35 40 45  
 Glu Leu Gly Lys His Leu Gly Arg Gly Val Lys Ala Lys Arg Ile Lys  
 50 55 60  
 Asn Ser Arg Asn His Leu Ile Asn Tyr Asp  
 65 70

<210> 8224  
 <211> 212  
 <212> PRT  
 <213> B.fragilis

<400> 8224  
 Ile Thr Ile Ser Met Ala Lys Ala Ser Trp Cys Asn Val Ser Pro Met  
 1 5 10 15  
 Ser Gly Ser Glu Asn Gly Thr Leu Thr Ile Ser Ala Ala Ala His Ala  
 20 25 30  
 Gly Arg Glu Ala Arg Ser Thr Thr Val Thr Ala Lys Asn Gly  
 35 40 45  
 Thr Lys Pro Ser Ala Ser Ile Ala Val Ser Gln Ala Gly Val Gly Val  
 50 55 60  
 Gln Leu Thr Met Asp Thr Ser Lys Pro Asp Leu Pro Gly Glu Gly Gly  
 65 70 75 80  
 Ser Val Thr Ile Asn Gly Asn Ser Asn Ser Pro Thr Leu Lys Ile Ser  
 85 90 95  
 Val Pro Leu Ile Asn Phe Pro Gly Val Thr Ala Ser Ala Lys Phe Asn  
 100 105 110  
 Ala Pro Gly Ile Thr Asp Lys Val Leu Ala Ala Ser Glu Thr Val Thr  
 115 120 125  
 Ile Pro Gly Asp Pro Gly Ala Asn Gly Ser Tyr Ala Phe Ser Ile Lys  
 130 135 140  
 Leu Glu Ile Ala Arg Asn Pro Leu Pro Thr Pro Leu Ala Pro Asn Val  
 145 150 155 160  
 Asp Val Thr Asp Ser Ala Gly Lys Met Val Arg Cys Gln Phe Lys Trp  
 165 170 175  
 Ala Ala Gly Ala Ser Ala Leu Ser Val Asn Lys Ser Ser Leu Ser Leu  
 180 185 190  
 Val Asn Val Gly Thr Gly Gln Thr Val Asp Val Thr Ser Asn Asp Glu  
 195 200 205  
 Trp Ala Val Ser  
 210

<210> 8225  
 <211> 81  
 <212> PRT  
 <213> B.fragilis

<400> 8225

Leu Lys His Ser Glu Pro Thr Ile Cys Asn Gly Val Tyr Ile Ile Ile  
 1 5 10 15  
 Asn Lys Arg Lys Glu Ile Gly Leu Met Asn Thr Glu Lys Glu Lys Thr  
 20 25 30  
 Ser Ser Glu Glu Lys Lys Ala Glu Lys Val Leu Lys Asp Lys Val  
 35 40 45  
 Pro Val Gln Gln Thr Gly Thr Tyr Ser Glu Ala Thr Lys Lys Glu Val  
 50 55 60  
 Arg Asp Ala Val Lys Glu Leu Asn Pro Asp Met Ser Gly Leu Asp Arg  
 65 70 75 80  
 Gly

&lt;210&gt; 8226

&lt;211&gt; 434

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8226

Pro Ala Asp Arg Leu Thr Gly Ile Ile Asn Cys Lys Ser Lys Lys Gln  
 1 5 10 15  
 Asn Asn Met Asp Ile Lys Ile Glu Lys Lys Pro Trp Tyr Ile Arg Tyr  
 20 25 30  
 Lys Phe Tyr Ile Ala Gly Gly Ile Ala Phe Val Ala Phe Leu Val Tyr  
 35 40 45  
 Val Ile Ile Leu Ser Ala Gly Pro Arg Lys Leu Arg Ile Glu Ser Glu  
 50 55 60  
 Asn Ile Gln Ile Ala Glu Val Lys Asp Asp Lys Phe Met Glu Tyr Val  
 65 70 75 80  
 Asp Val Glu Gly Leu Ile Gln Pro Ile Leu Thr Ile Lys Val Asn Thr  
 85 90 95  
 Arg Glu Ala Gly Ser Val Glu Arg Ile Ile Ala Glu Glu Gly Ser Leu  
 100 105 110  
 Leu Gln Lys Gly Asp Thr Ile Leu Thr Leu Ser Asn Pro Asp Leu Leu  
 115 120 125  
 Arg Ser Ile Glu Asp Gln Arg Asp Asp Trp Glu Lys Gln Arg Ile Thr  
 130 135 140  
 Tyr Gln Glu Lys Glu Ile Glu Met Glu Gln Lys Ser Leu Ser Leu Lys  
 145 150 155 160  
 Gln Gln Thr Leu Glu Thr Asn Tyr Glu Leu Ala Arg Leu Lys Lys Ser  
 165 170 175  
 Phe Thr Leu Asp Lys Glu Glu Phe Arg Met Gly Ile Lys Ser Lys Ala  
 180 185 190  
 Gln Leu Glu Val Ser Glu Asp Glu Tyr Asn Tyr Lys Val Lys Asn Ala  
 195 200 205  
 Glu Leu Gln Arg Glu Gly Leu Arg His Asp Ser Ala Val Thr Ile Ile  
 210 215 220  
 Arg Lys Asp Leu Ile Arg Thr Asp Met Glu Arg Glu Arg Lys Lys Tyr  
 225 230 235 240  
 Glu Arg Ala Thr Glu Arg Leu Gly Asn Leu Val Val Lys Ala Pro Ile  
 245 250 255  
 Ser Gly Gln Leu Ser Phe Val Lys Val Thr Pro Gly Gln Gln Val Gly  
 260 265 270  
 Ser Ser Glu Ser Ile Ala Glu Ile Lys Val Leu Asp Gln Tyr Lys Ile  
 275 280 285  
 His Thr Ser Leu Ser Glu Tyr Thr Ile Asp Arg Ile Thr Thr Gly Leu  
 290 295 300  
 Pro Ala Thr Val Asn Tyr Gln Gly Lys Lys Tyr Pro Leu Arg Ile Thr  
 305 310 315 320

Lys Val Val Pro Glu Val Lys Asp Arg Met Phe Asp Val Asp Leu Val  
 325 330 335  
 Phe Thr Gly Glu Met Pro Asp Asn Val Arg Val Gly Lys Ser Phe Arg  
 340 345 350  
 Val Gln Ile Glu Leu Gly Gln Pro Glu Gln Ala Ile Val Ile Pro Arg  
 355 360 365  
 Gly Asn Phe Tyr Gln Ala Thr Gly Gly Gln Trp Ile Tyr Lys Ala Asn  
 370 375 380  
 Ala Ser Arg Thr Lys Ala Val Arg Thr Pro Ile Thr Ile Gly Arg Gln  
 385 390 395 400  
 Asn Pro Gln Gln Tyr Glu Ile Thr Gly Gly Leu Glu Pro Gly Asp Tyr  
 405 410 415  
 Val Val Thr Thr Gly Tyr Asp Thr Phe Gly Glu Ala Glu Glu Leu Ile  
 420 425 430  
 Leu Lys

<210> 8227  
 <211> 429  
 <212> PRT  
 <213> B.fragilis

<400> 8227  
 Lys Thr Gly Leu Met Lys Arg Tyr Ser Ile Ser Val Val Leu His Ile  
 1 5 10 15  
 Leu Leu Leu Val Val Leu Ser Ile Gly Tyr Leu Leu Phe Cys Tyr  
 20 25 30  
 Glu Leu Trp Phe Ser Thr Leu Ile Val Gly Ile Leu Leu Ile Ala Thr  
 35 40 45  
 Gly Val His Leu Tyr Ser Ile Gln Met Lys Leu Ala Gly Met Met Arg  
 50 55 60  
 Arg Leu Thr Asp Cys Ile Arg Phe Asn Asp Met Thr Gln Asn Phe Gln  
 65 70 75 80  
 Pro Pro Phe Lys Ser Lys Met Met Val Glu Leu Ala Asp Glu Leu Ser  
 85 90 95  
 Gln Thr Leu Arg Leu Phe Arg Gly Arg Leu Leu Glu Glu Glu Ile Lys  
 100 105 110  
 His Gln Tyr Tyr Glu Asn Leu Leu Asn Lys Val Asp Thr Ala Val Val  
 115 120 125  
 Val Thr Asp Arg Ser Gly Arg Val Glu Trp Met Asn Arg Ala Ala Val  
 130 135 140  
 Ala Leu Val Gly Gln Glu Ser Arg Leu Pro Gln Glu Trp Leu Thr Thr  
 145 150 155 160  
 Ser Trp Asn Glu Thr Gln Val Val Arg Ile Arg Gln Gln Gly Ala Ser  
 165 170 175  
 Val Glu Met Ala Val Ser Cys Thr Leu Phe Ala Ala Gln Asn Lys Glu  
 180 185 190  
 Arg Leu Leu Val Ser Leu Lys Asn Ile His Ser Val Leu Glu Arg Asn  
 195 200 205  
 Glu Met Glu Ala Trp Gln Lys Leu Ile Arg Val Leu Thr His Glu Ile  
 210 215 220  
 Met Asn Ser Ile Thr Pro Ile Ile Ser Leu Ser Glu Thr Leu Ser Glu  
 225 230 235 240  
 Arg Gly Ile Pro Glu Arg Leu Ser Glu Lys Glu Tyr Gly Val Met Leu  
 245 250 255  
 Gln Ala Met Gln Thr Ile His Arg Arg Ser Lys Gly Leu Leu Gly Phe  
 260 265 270  
 Val Glu Asn Tyr Arg Arg Leu Thr Arg Ile Pro Thr Pro Ala Arg Thr  
 275 280 285

Leu Val Ala Val Asp Glu Leu Phe Ser Asp Leu Arg Lys Leu Phe Pro  
 290 295 300  
 Asp Ser Phe Ile His Phe Ala Ala Thr His Arg Gly Ala Thr Leu Tyr  
 305 310 315 320  
 Ile Asp Arg Ala Gln Ile Glu Gln Val Leu Ile Asn Leu Ile Lys Asn  
 325 330 335  
 Ala Lys Glu Ser Cys Gly Gln Asn Thr Ala Pro Gln Ile Glu Val Glu  
 340 345 350  
 Leu Glu Gln Val Pro Gly Lys Val Cys Ser Leu Thr Val Arg Asp Asn  
 355 360 365  
 Gly Glu Gly Ile Leu Pro Glu Val Ile Asp Lys Val Phe Val Pro Phe  
 370 375 380  
 Phe Thr Thr Lys Pro Ser Gly Ser Gly Ile Gly Leu Ser Leu Cys Lys  
 385 390 395 400  
 Gln Ile Met Asn Leu His Gly Gly Thr Ile Thr Val Ser Ser Glu Ile  
 405 410 415  
 Gly Lys Gly Ser Cys Phe Thr Leu Met Phe Pro Gly Arg  
 420 425

&lt;210&gt; 8228

&lt;211&gt; 417

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8228

Val Phe Ile Met Ala Ser Ile Lys Leu Tyr Phe Asp Lys Arg Val Asn  
 1 5 10 15  
 Arg Lys Asp Gly Lys Phe Pro Leu Lys Ile Asn Val Thr His Lys Arg  
 20 25 30  
 Gln Gln Ala Leu Ile Asn Leu Gly Val Leu Leu Ser Pro Asp Gln Trp  
 35 40 45  
 Asp Ser Thr Lys Gly Lys Val Ile Asn Gly Pro Asn Lys Ser Phe Leu  
 50 55 60  
 Asn Gly Tyr Ile Ser Gln Arg Val His Cys Ala Glu Thr Glu Leu Leu  
 65 70 75 80  
 Asn Leu Arg Ile Ala Gly Lys Leu Asp Leu Met Thr Gly Lys Gln Phe  
 85 90 95  
 Lys Glu His Leu Gln Arg Ile Leu Leu Arg Gly Lys Leu Glu Glu Lys  
 100 105 110  
 Gln Glu Glu Thr Gly Cys Ser Phe Val Gln Tyr Tyr Thr Arg Phe Val  
 115 120 125  
 Glu Gly Lys Lys Asn Pro Gln Thr Lys Ala Val Tyr Gln Tyr Thr Leu  
 130 135 140  
 Asp Arg Ile Cys Arg Phe Val Asp Val Pro Asp Lys Phe Arg Phe Glu  
 145 150 155 160  
 Asp Val Thr Tyr Ala Trp Leu Lys Ser Phe Glu Ile His Leu Ser Glu  
 165 170 175  
 Thr Ser Lys Val Asn Ser Ile Ser Ile His Met Arg Asn Ile Arg Ala  
 180 185 190  
 Val Phe Asn Asp Ala Leu Asn Thr Glu Thr Ile Ser Cys Tyr Pro Phe  
 195 200 205  
 Arg Arg Phe Lys Ile Lys Gln Glu Ala Thr Ala Lys Arg Ala Leu Thr  
 210 215 220  
 Pro Glu Glu Leu Val Thr Leu Arg Asp Tyr Pro Cys Glu Glu His Gln  
 225 230 235 240  
 Lys Gln Tyr Val Asp Ile Phe Met Leu Ile Phe Tyr Leu Val Gly Ile  
 245 250 255  
 Asn Thr Val Asp Leu Cys Arg Leu Glu Lys Ile Arg Asn Gly Arg Ile  
 260 265 270

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Glu Tyr Arg Arg Ala Lys Thr Lys Lys Ile Tyr Asn Ile Lys Val Glu  
 275 280 285  
 Pro Glu Ala Ala Glu Ile Ile Glu Arg Tyr Lys Gly Ser Lys Tyr Leu  
 290 295 300  
 Leu Asn Ile Leu Glu Arg Tyr Lys Asn Tyr Lys Asp Tyr Ala His Arg  
 305 310 315 320  
 Leu Asn Glu Asn Leu Gln Glu Ile Gly Ser Val Glu Leu Val Glu Lys  
 325 330 335  
 Val Ile Asn Gly Lys Arg Arg Arg Val Lys Lys Arg Phe Pro Leu Phe  
 340 345 350  
 Pro Glu Leu Thr Val Tyr Trp Ala Arg His Thr Trp Ala Thr Ile Ala  
 355 360 365  
 His Lys Ile Gly Val Ser Lys Asp Val Ile Ser Leu Ala Leu Gly His  
 370 375 380  
 Glu Phe Gly Cys Lys Thr Thr Ser Ile Tyr Ile Asp Tyr Asp Met Glu  
 385 390 395 400  
 Lys Val Asp Lys Ala Asn Arg Gln Val Leu Asp Tyr Leu Glu Asn Leu  
 405 410 415  
 Lys

<210> 8229  
 <211> 210  
 <212> PRT  
 <213> B.fragilis

<400> 8229  
 Ile Thr Ser Met Ala Lys Ala Ser Trp Cys Asn Val Ser Pro Met Ser  
 1 5 10 15  
 Gly Lys Arg Asp Gly Val Leu Thr Ile Ser Ala Gly Ala His Thr Gly  
 20 25 30  
 Arg Val Ala Arg Asn Thr Val Val Thr Val Thr Ala Ala Asn Gly Thr  
 35 40 45  
 Arg Pro Ser Ala Ser Ile Ala Val Ser Gln Ala Gly Ala Gly Val Ser  
 50 55 60  
 Thr Thr Met Asp Thr Ser Lys Pro Asp Leu Pro Ser Ser Gly Gly Val  
 65 70 75 80  
 Val Asn Ile Asn Gly Thr Ser Asn Ser Ser Lys Leu Lys Trp Thr Cys  
 85 90 95  
 Thr Ala Arg Val Met Gly Val Asp Met Pro Ile Asp Gly Asn Tyr Val  
 100 105 110  
 Lys Val Ala Val Asn Gly Gly Asn Ile Gly Asn Asn Val Ala Ile Pro  
 115 120 125  
 Gly Asp Pro Gly Ala Ser Gly Arg Phe Asn Phe Val Ala Thr Leu Thr  
 130 135 140  
 Phe Pro Ala Ser Met Phe Pro Val Asp Ala Val Val Thr Phe Arg Leu  
 145 150 155 160  
 Thr Asp Asp Thr Asn Ser Ala Lys Gln Cys Thr Phe Thr Trp Lys Ala  
 165 170 175  
 Gly Ala Ser Ser Leu Ser Val Asn Lys Ser Ser Leu Ser Leu Val Asn  
 180 185 190  
 Gly Gly Thr Gly Gln Thr Val Asn Val Thr Ser Asn Asp Asp Trp Asn  
 195 200 205  
 Val Ser  
 210

<210> 8230  
 <211> 125  
 <212> PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8230

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Ile Lys Leu Val Leu Ile Ile His Thr Lys Asn Val Ile Met Lys Lys
1          5          10          15
Val Leu Val Ala Leu Thr Met Val Met Gly Met Gly Ser Ala Val Ala
          20          25          30
Phe Ala Gln Glu Pro Val Lys Leu Pro Ala Met Glu Gln Asn Gln Gln
          35          40          45
Thr Ser Gln Asp Lys Phe Thr Lys Ile Thr Val Lys Glu Leu Pro Gln
          50          55          60
Val Val Lys Ser Thr Leu Ser Lys Asp Tyr Glu Gly Thr Ile Val Lys
65          70          75          80
Glu Ala Phe Val Ala Glu Lys Glu Asn Gly Lys Val Tyr Lys Ile Ile
          85          90          95
Val Thr Ala Ile Lys Glu Asp Gln Ser Thr Glu Glu Ile Thr Val Leu
          100          105          110
Leu Asn Glu Lys Gly Glu Pro Val Asn Glu Lys Asp Cys
          115          120          125

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&lt;210&gt; 8231

&lt;211&gt; 229

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8231

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Asn Leu Pro Ser Lys Pro Asn Leu Pro Pro Ser Val Lys Glu Gln Ala
1          5          10          15
Asp Asp Glu Ala Ile Arg Val Phe Thr Glu Asn Leu Arg Gln Leu Leu
          20          25          30
Leu Ala Pro Pro Leu Gly Gln Lys Arg Val Met Gly Ile Asp Pro Gly
          35          40          45
Phe Arg Thr Gly Cys Lys Val Val Cys Leu Asp Ala Gln Gly Asn Leu
          50          55          60
Val His Asn Glu Asn Ile Tyr Pro His Pro Pro Val Asp Lys Lys Thr
65          70          75          80
Glu Ala Ala Ser Lys Leu Arg Lys Met Ile Glu Ala Tyr Lys Ile Glu
          85          90          95
Ala Ile Ala Ile Gly Asn Gly Thr Ala Ser Arg Glu Thr Glu Asn Phe
          100          105          110
Val Thr His Gln Gln Phe Asp Arg Pro Val Gln Val Phe Val Val Ser
          115          120          125
Glu Gln Gly Ala Ser Ile Tyr Ser Ala Ser Lys Thr Ala Arg Asp Glu
          130          135          140
Phe Pro Asp Tyr Asp Val Thr Val Arg Gly Ala Val Ser Ile Ala Arg
145          150          155          160
Arg Leu Met Asp Pro Leu Ala Glu Leu Val Lys Ile Ala Pro Lys Pro
          165          170          175
Ile Gly Val Gly Gln Tyr Gln His Asp Val Asp Gln Thr Lys Leu Lys
          180          185          190
Lys Ser Leu Asp Gln Thr Val Glu Asn Cys Gly Met Ser Glu Thr Thr
          195          200          205
Lys Gly Ser Val Ile Lys Lys Arg Ile Leu Ala Ile Phe Leu Arg His
          210          215          220
Tyr Ser Ala Asn Gly
225

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&lt;210&gt; 8232

&lt;211&gt; 982

<212> PRT  
 <213> B.fragilis

<400> 8232

Phe	Glu	Thr	Ser	Asn	Leu	Met	Lys	Gln	Asn	Thr	Phe	Ile	Tyr	Ala	Ala
1				5					10					15	
Ile	Ala	Phe	Phe	Val	Cys	Ser	Ser	Cys	Thr	Ser	Gly	Lys	Tyr	Ser	Pro
			20					25					30		
Val	Asp	Tyr	Val	Asp	Pro	Phe	Ile	Gly	Thr	Gly	Phe	His	Gly	His	Thr
		35					40					45			
Tyr	Pro	Gly	Ala	Thr	Val	Pro	Phe	Gly	Ala	Val	Gln	Leu	Ser	Pro	Asp
	50					55					60				
Thr	Arg	Ala	Gly	Asn	Trp	Asp	Ala	Cys	Ala	Gly	Tyr	His	Tyr	Asp	Asp
65					70					75					80
Thr	Thr	Leu	Lys	Gly	Phe	Ser	His	Thr	His	Leu	Ser	Gly	Thr	Gly	Cys
				85					90					95	
Ile	Asp	Leu	Gly	Asp	Ile	Leu	Phe	Arg	Pro	Thr	Thr	Leu	Lys	Pro	Asp
			100					105					110		
Leu	Thr	Ala	Glu	Ser	Ile	Cys	Arg	Pro	Ala	Asn	Phe	Ser	His	Lys	Asp
		115					120					125			
Glu	Arg	Ala	Ser	Ala	Gly	Tyr	Tyr	Ser	Val	Ile	Leu	Lys	Gly	Glu	Gly
	130					135					140				
Ile	Lys	Ala	Glu	Leu	Thr	Ala	Thr	Thr	His	Thr	Gly	Met	His	Arg	Tyr
145					150					155					160
Thr	Phe	Pro	Ser	Gly	Lys	Pro	Val	Thr	Ile	Ile	Val	Asp	Leu	Ala	His
				165					170					175	
Leu	Leu	Asp	Asn	Glu	Tyr	Ile	Tyr	Glu	Ala	Glu	Leu	Glu	Arg	Thr	Thr
			180					185					190		
Ser	Asn	Glu	Ile	Val	Gly	Met	Arg	Arg	Thr	Arg	Gly	Trp	Thr	Asp	Asn
		195					200					205			
Gln	Tyr	Val	Tyr	Phe	Ala	Ala	Gln	Phe	Ser	Glu	Pro	Phe	Gln	Thr	Val
	210				215						220				
Glu	Phe	Val	Gln	Asp	Lys	Lys	Ile	Val	Ser	Ala	Glu	Thr	Lys	Gln	Val
225					230					235					240
Gly	Thr	Asp	Leu	Gln	Ala	Ile	Leu	Thr	Phe	Ala	Asp	Lys	Asp	Gly	Glu
				245					250					255	
Pro	Ile	Ile	Ala	Lys	Val	Gly	Leu	Ser	Leu	Val	Ser	Val	Asp	Asn	Ala
			260				265						270		
Arg	Lys	Asn	Leu	Ala	Glu	Glu	Val	Lys	Asp	Phe	Asn	Phe	Asp	Ala	Val
		275					280					285			
Cys	Ala	Ala	Ala	Arg	Asn	Asp	Trp	Glu	Gln	Ala	Leu	Ser	Ser	Ile	Thr
	290					295					300				
Val	Glu	Gly	Gly	Gly	Thr	Asp	Asp	Leu	Lys	Asn	Phe	Tyr	Thr	Ala	Ile
305					310						315				320
Tyr	His	Ala	Met	Val	Val	Pro	Asn	Val	Val	Ser	Asp	Val	Asn	Gly	Glu
				325					330					335	
Tyr	Arg	Arg	His	Asn	Met	Gln	Ile	Gly	Gln	Leu	Pro	Lys	Gly	Lys	Met
			340					345					350		
Gln	Tyr	Ser	Thr	Phe	Ser	Leu	Trp	Asp	Thr	Phe	Arg	Ala	Trp	Asn	Pro
		355					360					365			
Leu	Met	Thr	Leu	Ile	Asp	Thr	Ala	Leu	Val	Asn	Asn	Met	Val	Asn	Ser
	370					375						380			
Tyr	Leu	Asp	Ile	Tyr	Asp	Ala	Ser	Gly	Glu	Leu	Pro	Ile	Trp	Pro	Leu
385					390						395				400
Ser	Ala	Ala	Glu	Thr	Gly	Thr	Met	Ile	Gly	Tyr	His	Ser	Val	Ser	Val
				405					410					415	
Ile	Ala	Asp	Ala	Tyr	Leu	Lys	Gly	Ile	Arg	Gly	Phe	Asp	Ala	Glu	Lys
				420				425					430		
Ala	Leu	Asp	Ala	Met	Lys	Val	Ser	Ser	Glu	Lys	Asn	Lys	Lys	Gly	Ala

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1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100



Val Leu Tyr Ile Gly Asn Glu Leu Val Val Asn Asn Asp Gly Ala His  
 915 920 925  
 Ala Ala Ile Pro Asp Thr Gly Tyr Ile Ala Leu Glu Lys Gly Phe His  
 930 935 940  
 Pro Tyr Ile Leu Tyr Tyr Phe Glu Asp Tyr Glu Gly Glu His Leu Ser  
 945 950 955 960  
 Trp Phe Trp Lys Leu Pro Ser Ala Lys Glu Leu Ala Pro Ile Pro Thr  
 965 970 975  
 Ser Ala Leu Phe Val Lys  
 980

<210> 8233  
 <211> 60  
 <212> PRT  
 <213> B.fragilis

<400> 8233  
 Ser Met Arg Ser Thr Phe Lys Val Leu Phe Tyr Leu Lys Arg Asn Ala  
 1 5 10 15  
 Pro Lys Lys Asn Gly Leu Val Pro Val Met Tyr His Phe Ser Ile Tyr  
 20 25 30  
 Asp Asn Asn Thr Lys Leu Tyr Ser Arg Glu Gln Ser Arg Lys Glu Ala  
 35 40 45  
 Cys Ala Ile Asp Ile Arg Phe Leu Leu Asn Lys Lys  
 50 55 60

<210> 8234  
 <211> 104  
 <212> PRT  
 <213> B.fragilis

<400> 8234  
 Lys Arg Leu Ser Met Lys Arg Asn Met Ser Arg Arg His Phe Leu Lys  
 1 5 10 15  
 Thr Gly Gly Leu Ala Leu Ala Ala Met Ala Met Cys Pro Pro Leu Ser  
 20 25 30  
 Phe Ala Ser Ser Glu Met Pro Val Gln Lys Tyr Ile Ser Leu Arg Pro  
 35 40 45  
 Pro Val Gly Lys Arg His Phe Val Ser Lys Ala Val Glu Ala Thr Ile  
 50 55 60  
 Glu Gln Thr Arg Pro Lys Ile Lys Asp Glu Lys Leu Arg Trp Met Phe  
 65 70 75 80  
 Glu Asn Cys Phe Pro Asn Thr Leu Asp Thr Thr Val Arg Tyr Lys Met  
 85 90 95  
 Lys Ala Gly Arg Ile His Ser Ser  
 100

<210> 8235  
 <211> 1054  
 <212> PRT  
 <213> B.fragilis

<400> 8235  
 Thr Leu Asn Phe Glu Cys Met Lys Gln Val Asn Leu Arg Ile Tyr Gln  
 1 5 10 15  
 Thr Ile Leu Thr Leu Leu Val Gly Leu Phe Leu Ser Ala Gly Ala Tyr  
 20 25 30  
 Ala Gln Gln Ile Ser Val Arg Gly Ile Val Lys Asp Gln Met Gly Glu  
 35 40 45

Pro	Val	Ile	Gly	Ala	Asn	Val	Leu	Val	Lys	Gly	Thr	Ser	Asn	Gly	Val
50					55					60					
Ile	Thr	Asp	Ile	Asp	Gly	Lys	Phe	Ala	Leu	Ser	Ala	Ala	Lys	Asn	Asp
65					70					75				80	
Ile	Leu	Ile	Ile	Ser	Phe	Val	Gly	Phe	Met	Ser	Gln	Glu	Ile	Pro	Val
				85					90					95	
Thr	Gly	Lys	Asp	Leu	Met	Val	Thr	Leu	Lys	Glu	Asp	Thr	Gly	Leu	Leu
			100					105					110		
Asp	Glu	Val	Val	Val	Leu	Gly	Tyr	Gly	Ala	Asn	Ala	Arg	Lys	Gln	Asp
		115					120					125			
Leu	Ser	Ala	Ala	Val	Gly	Val	Leu	Ser	Asn	Thr	Asp	Asp	Leu	Thr	Val
	130					135					140				
Arg	Pro	Val	Ser	Ser	Thr	Glu	Ser	Leu	Leu	Gln	Gly	Gln	Leu	Ala	Gly
145					150					155					160
Val	Thr	Val	Gln	Ser	Asn	Gly	Gly	Asp	Pro	Thr	Ser	Thr	Pro	Ser	Ile
				165					170					175	
Val	Ile	Arg	Gly	Gln	Gly	Ser	Gln	Asn	Gly	Asp	Asn	Val	Leu	Trp	Val
			180					185					190		
Val	Asp	Gly	Val	Pro	Gly	Ala	Pro	Ile	Ala	Ser	Met	Ser	Asp	Ile	Glu
		195					200					205			
Ser	Ile	Val	Val	Leu	Lys	Asp	Ala	Ala	Ser	Ala	Ala	Ile	Tyr	Gly	Ala
	210					215					220				
Gln	Ser	Gly	Ala	Gly	Gly	Val	Ile	Leu	Val	Thr	Thr	Lys	Lys	Ala	Lys
225					230						235				240
Ala	Gly	Ile	Pro	Thr	Leu	Ser	Tyr	Glu	Gly	Thr	Tyr	Gly	Ile	Arg	Gln
				245					250					255	
Ala	Thr	Asn	Leu	Pro	Glu	Pro	Leu	Asn	Ala	Glu	Glu	Glu	Leu	Glu	Met
			260					265					270		
Arg	Lys	Arg	Ser	Tyr	Ala	Asn	Ala	Asn	Val	Thr	Leu	Pro	Asp	Gly	Trp
		275					280						285		
Asn	Ile	Glu	Lys	Asn	Pro	Trp	Ile	Gly	Thr	Thr	Arg	Thr	Asn	Trp	Met
	290					295					300				
Asp	Glu	Ile	Phe	Arg	Thr	Ala	Phe	Tyr	Gln	Arg	His	Asn	Ile	Ala	Leu
305					310					315					320
Asn	Val	Gly	Thr	Asp	Asn	Tyr	Ser	Ser	Arg	Leu	Ser	Phe	Ser	Phe	Asp
				325					330					335	
Asn	Asp	Glu	Gly	Val	Leu	Ile	Asn	Thr	Tyr	Asn	Lys	Asn	Tyr	Ala	Ile
			340					345					350		
Arg	Tyr	Asn	Gly	Lys	Phe	Asp	Leu	Asn	Lys	Trp	Val	Ser	Ile	Ser	Glu
		355					360					365			
Asp	Leu	Val	Trp	Lys	Asn	Thr	Glu	Asn	Arg	Ser	Lys	Asp	Thr	Asn	Asp
	370					375					380				
Ala	Tyr	Thr	Gly	Pro	Val	Leu	Ser	Ala	Ile	Tyr	Met	Pro	Ala	Ser	Ala
385					390					395					400
Thr	Val	Tyr	Asn	Pro	Leu	Asp	Gly	Thr	Trp	Gly	Gly	Thr	Thr	Thr	Glu
			405						410					415	
Asp	Pro	Glu	Tyr	Ile	Ala	Lys	Tyr	Gly	Ser	Asn	Phe	Ala	Gly	Ala	His
			420					425					430		
Gly	Asp	Ala	Val	Asn	Pro	Val	Arg	Leu	Leu	Arg	Ala	Glu	Asn	Arg	Phe
		435					440					445			
Asn	Arg	Thr	Ser	Asp	Val	Trp	Ser	Thr	Thr	Ser	Leu	Gln	Ile	Ala	Asn
	450					455					460				
Ile	Ile	Gln	Gly	Leu	Lys	Phe	Thr	Ser	Arg	Phe	Thr	Tyr	Asn	Leu	Lys
465					470					475					480
Thr	Asn	Asn	Tyr	Lys	Asn	Phe	Arg	Pro	Ile	Gln	Asp	Glu	Pro	Gly	Lys
				485					490					495	
Pro	Asn	Asn	Ser	Asn	Ser	Leu	Asp	Val	Thr	Asn	Tyr	Arg	Thr	Asp	Ala
			500					505					510		
Trp	Lys	Thr	Glu	Asn	Thr	Leu	Thr	Tyr	Asp	Asn	Ser	Phe	Gly	Asn	His

4446  
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515	520	525
Thr Val Gly Ala Leu Phe Ser	Thr Thr Ala Asp His	Tyr Asn Val Arg
530	535	540
Gly Leu Lys Val Asn Gly Lys	Asn Phe Ala Asp Glu Ser	Pro Tyr Leu
545	550	555
Gln Tyr Leu Ala Tyr Ala Gly	Thr Thr Ser Ala Thr Asp	Tyr Leu Thr
565	570	575
Gly Pro Asp Ala Asn Val Ser	Leu Val Ala Arg Leu Ala	Tyr Ser Tyr
580	585	590
Asp Asp Arg Tyr Phe Val Thr	Ala Ser Trp Arg Arg Asp	Tyr Ala Gly
595	600	605
Arg Leu Pro Lys Glu Asn Asn	Phe Gly Asp Phe Pro Ala	Ala Thr Leu
610	615	620
Ala Trp Lys Ile Ser Asn Glu	Lys Phe Phe Lys Lys Ser	Asp Phe Ile
625	630	635
Gly Met Leu Lys Leu Arg Ala	Ser Trp Gly Arg Val Gly	Asn Leu Gly
645	650	655
Ser Ile Asp Tyr Asn Tyr Lys	Ser Leu Leu Leu Gly Thr	Ser Tyr Trp
660	665	670
Gln Glu Gln Ala Gln Tyr Gly	Val Ile Asn Asn Ala Thr	Trp Asn Asn
675	680	685
Phe Val Tyr Asn Ser Thr Ala	Met Asn Arg Asn Leu Thr	Trp Glu Thr
690	695	700
Ser Glu Gln Trp Asp Leu Gly	Leu Asp Val Glu Leu Phe	Lys Asn Arg
705	710	715
Leu Ala Leu Ser Phe Asp Tyr	Phe Asp Lys Arg Thr Phe	Asn Leu Ile
725	730	735
Gln Lys Gln Thr Met Asn Trp	Pro Ser Ser Ile Gly Leu	Asp Pro Leu
740	745	750
Leu Ile Asn Gln Gly Glu Ile	Arg Asn Arg Gly Ile Glu	Ile Gln Ala
755	760	765
Asn Trp Asn Asp Arg Val Asn	Lys Asp Phe Ser Tyr Phe	Val Ser Gly
770	775	780
Asn Phe Ser Tyr Leu Lys Asn	Cys Val Ser Asp Ile Gly	Val Lys Asn
785	790	795
Ala Asp Gly Ser Pro Gly Val	Trp Thr Asp Ser Asp Ser	Lys Phe Arg
805	810	815
Asn Ile Pro Tyr Thr Arg Gln	Thr Ala Glu Gly Glu Pro	Leu Asn Ser
820	825	830
Tyr Tyr Leu Ile Lys Thr Asp	Gly Ile Phe Gln Ser Asp	Ala Glu Ala
835	840	845
Ala Ala Tyr Val Asp Lys Asn	Gly Lys Arg Ile Gln Pro	Asn Ala Val
850	855	860
Ala Gly Asp Leu Lys Phe Ile	Asp Tyr Asn Asn Asp Gly	Lys Ile Asp
865	870	875
Asp Lys Asp Arg Gln Tyr Cys	Gly Ser Ala Thr Pro Lys	Ile Thr Tyr
885	890	895
Ser Phe Ser Phe Gly Ala Thr	Tyr Lys Lys Phe Ser Phe	Ser Ala Met
900	905	910
Phe Gln Gly Val Gly Gly Ala	Gln Ala Phe Tyr Ala Ala	Lys Ser Val
915	920	925
Ile Leu Ser Asp Ala Asp Gly	Asn Phe Asn Arg Val Lys	Asp Ile Leu
930	935	940
Asn Ala Trp Ser Pro Thr Asn	Thr Ser Ser Asn Ile Pro	Arg Leu Ser
945	950	955
Met Asn Asp Pro Asn Ser Asn	Phe Ser Thr Ala Ser Asp	Trp Tyr Leu
965	970	975
Glu Ser Ala Ser Tyr Leu Arg	Leu Lys Asn Leu Thr Leu	Ser Tyr Asp
980	985	990

Leu Thr Asp Val Leu Gln Lys Trp Ser His Leu Arg Glu Arg Asn Ser  
 995 1000 1005  
 Arg Met Ser Val Phe Phe Ser Gly Glu Asn Leu Phe Thr Ile Thr Asp  
 1010 1015 1020  
 Tyr Ser Gly Met Asp Pro Glu Cys Gly Gly Trp Asp Ala Met Lys Tyr  
 1025 1030 1035 1040  
 Pro Val Ser Arg Val Phe Ser Phe Gly Val Lys Leu Thr Tyr  
 1045 1050

<210> 8236  
 <211> 61  
 <212> PRT  
 <213> B.fragilis

<400> 8236  
 Phe Tyr Tyr Tyr His Ser Leu Ile Asn Leu Asn Tyr Val Tyr Tyr Cys  
 1 5 10 15  
 Ile Asn Phe Ser Phe Phe Leu Ser Val Asn Asn Val Gly Thr Val Ala  
 20 25 30  
 Ser Gly Ile Tyr Asn Val Met Pro Gln Cys Pro Ser Met Val Asn Pro  
 35 40 45  
 Pro Thr Leu Ser Gly Ile Lys Phe Ser Val Ala Ala Leu  
 50 55 60

<210> 8237  
 <211> 78  
 <212> PRT  
 <213> B.fragilis

<400> 8237  
 Tyr Phe Phe His Ile Cys Arg Leu Phe Asp Asn Tyr Ala Ala Leu Ser  
 1 5 10 15  
 Tyr Asn Glu Arg Glu Asn Asp Phe Ile Asn Ile Ile Ser Ile Tyr Asn  
 20 25 30  
 Thr Val Ser Tyr Phe Ile Ser His Leu Lys Met Phe Leu Ser Phe Phe  
 35 40 45  
 Ile Phe Arg Asn Lys Glu Lys Val Tyr Glu Cys Asn Thr Leu Ile Asn  
 50 55 60  
 Asn Thr Leu Leu Asn Ile Asp Ser Glu Thr Leu Ser Glu Thr  
 65 70 75

<210> 8238  
 <211> 250  
 <212> PRT  
 <213> B.fragilis

<400> 8238  
 Cys Ile Ile Asn Gln Cys Ile Thr Phe Ile His Phe Phe Phe Val Ser  
 1 5 10 15  
 Glu Asn Lys Lys Thr Gln Lys His Phe Gln Met Gly Tyr Glu Val Thr  
 20 25 30  
 Tyr Cys Ile Ile Asn Ala Tyr Asn Ile Tyr Glu Val Ile Leu Pro Phe  
 35 40 45  
 Ile Ile Arg Lys Ser Arg Ile Ile Lys Gln Thr Thr Asn Met Lys  
 50 55 60  
 Lys Ile Leu Cys Ile Trp Val Leu Thr Val Thr Phe Leu Gly Ala Phe  
 65 70 75 80  
 Pro Ala Leu Ala Asp Ala Gln Gln Trp Gly Leu Thr Ala Asn Gly Leu  
 85 90 95

Tyr Trp Ala Thr Ala Thr Pro Asn Ile Gly Val Glu Tyr Ala Phe His  
 100 105 110  
 Ser Lys Met Ser Ile Ala Gly Leu Val Gln Tyr Asn Pro Phe Thr Tyr  
 115 120 125  
 Ala Lys Asn Arg Lys Met Lys His Leu Ala Gly Gln Leu Glu Tyr Arg  
 130 135 140  
 Tyr Trp Leu Ser Asp Val Phe Lys Gly His Tyr Leu Gly Val His Ala  
 145 150 155 160  
 Thr Gly Gly Ile Phe Asn Phe Gly Asn Leu Pro Leu Gly Ile Leu Lys  
 165 170 175  
 Asp Tyr Arg Leu Glu Gly Gln Leu Tyr Gly Gly Gly Leu Thr Tyr Gly  
 180 185 190  
 Tyr Gln Trp Ile Ile Ser Asn Arg Val Asn Ile Gly Val Asp Ile Gly  
 195 200 205  
 Leu Gly Tyr Leu Tyr Val Asp Tyr Asp Lys Phe Tyr Cys Pro Thr Cys  
 210 215 220  
 Gly Glu Arg Val Asp His Tyr Arg Thr Asn Tyr Leu Gly Pro Thr Lys  
 225 230 235 240  
 Val Gly Val Ser Ile Ile Tyr Leu Leu Lys  
 245 250

<210> 8239

<211> 391

<212> PRT

<213> B.fragilis

<400> 8239

Glu Arg Asp Asn Leu Val Lys Val Met Ile Thr Met Lys Asn Ile Leu  
 1 5 10 15  
 Arg Asn Phe Val Phe Ile Val Trp Ala Val Ala Leu Leu Pro Val Asn  
 20 25 30  
 Val Ser Ala Gln Asn Arg Arg Asp Lys Glu Gln Thr Tyr Val Leu Glu  
 35 40 45  
 Gln Pro Tyr Glu Val Thr Lys Ile Thr Pro Ser Gln Gly Lys Lys Ile  
 50 55 60  
 Lys Asn Val Ile Leu Met Ile Gly Asp Gly Met Ser Leu Met His Val  
 65 70 75 80  
 Tyr Ser Ala Trp Thr Ala Asn Arg Gly Lys Leu Phe Leu Asp Asn Cys  
 85 90 95  
 Gln Ala Val Gly Leu Ser Lys Thr Tyr Cys Ala Asp Lys Leu Ile Thr  
 100 105 110  
 Asp Ser Gly Ala Gly Gly Thr Ala Ile Ala Ser Gly Gln Lys Thr Asn  
 115 120 125  
 Tyr His Tyr Val Gly Val Asp Thr Leu Gly His Pro Leu Lys Ser Leu  
 130 135 140  
 Val Asp Phe Ala Ala Ala Lys Gly Lys Ser Thr Gly Ile Ala Val Thr  
 145 150 155 160  
 Cys Arg Leu Trp Asp Ala Thr Pro Ala Asp Phe Cys Cys His Asn Lys  
 165 170 175  
 Asp Arg Asp Ala Glu Ser Glu Ile Val Thr Asp Tyr Val Asn Cys Asn  
 180 185 190  
 Ala Asp Tyr Val Phe Gly Gly Gly Ala Lys Leu Phe Glu Asn Arg Glu  
 195 200 205  
 Asp Gly Arg Asp Leu Phe Lys Glu Leu Arg Glu Lys Gly Phe Arg Thr  
 210 215 220  
 Pro Arg Ser Trp Asp Glu Leu Ala Gly Ile Lys Ser Gly Lys Val Phe  
 225 230 235 240  
 Ala Val Pro Tyr Pro Val Asp Thr Pro Leu Pro Ala Glu Arg Gly Asp  
 245 250 255

Leu Leu Ala Arg Ala Ser Leu Lys Gly Ile Asp Leu Leu Asn Gln Asn  
 260 265 270  
 Lys Asn Gly Phe Phe Met Met Ile Glu Gly Ser Gln Leu Asp Asp Tyr  
 275 280 285  
 Gly His Phe Asn Asp Leu Asp Leu Leu Met Gln Glu Thr His Asp Phe  
 290 295 300  
 Asp Arg Thr Ile Gly Ala Ile Tyr Glu Trp Ala Ala Lys Asp Gly Glu  
 305 310 315 320  
 Thr Leu Val Val Val Thr Ala Asp His Glu Thr Gly Gly Leu Thr Leu  
 325 330 335  
 Val Asp Gly Asp Leu Lys Glu Gly Lys Ile Val Cys Lys Phe Ser Thr  
 340 345 350  
 Gly Gly His Ser Gly Val Met Val Pro Val Tyr Ala Phe Gly Pro Gly  
 355 360 365  
 Ala Gln Glu Phe Thr Gly Ile Tyr Glu Asn Thr Ala Ile Phe Asp Lys  
 370 375 380  
 Ile Lys Lys Leu Leu Asp Leu  
 385 390

<210> 8240  
 <211> 98  
 <212> PRT  
 <213> B.fragilis

<400> 8240  
 Lys Pro Leu Asn Gly Tyr Ala Met Lys Leu Ser Ile Asp Leu Gly Gly  
 1 5 10 15  
 Thr Asn Val Arg Ile Ala Gln Val Glu Asn Gly Ile Cys Leu Asn Lys  
 20 25 30  
 Met Ser Val Pro Cys Leu Ala Gln Gln Asp Ala Ser Ala Val Leu Asp  
 35 40 45  
 Gln Leu Phe Gln Leu Ile Thr Gly Met Met Asn Val Gln Val Asp Gly  
 50 55 60  
 Ile Gly Ile Gly Val Pro Ser Ile Val Asp Val Glu Lys Gly Ile Val  
 65 70 75 80  
 Tyr Asn Val Ala Asn Ile Ser Ser Trp Lys Lys Ile His Leu Lys Asp  
 85 90 95  
 Ile Leu

<210> 8241  
 <211> 407  
 <212> PRT  
 <213> B.fragilis

<400> 8241  
 Thr Lys Leu Lys Leu Phe Leu Ser Phe Ile Leu Ile Leu Pro Asp Thr  
 1 5 10 15  
 Met Ile Arg Leu Ile Leu Leu Thr Asp Phe Thr Glu Ser Phe Ser Tyr  
 20 25 30  
 Asn Leu Leu Lys Gly Val Leu Ala Tyr Ser Lys Lys His Glu Pro Trp  
 35 40 45  
 Val Val Cys Arg Met Pro Pro Ser Tyr Lys Leu Thr Tyr Gly Ile Glu  
 50 55 60  
 Gly Val Leu Lys Trp Ala Lys Ala Trp Gln Ala Asp Ala Ile Ile Gly  
 65 70 75 80  
 Arg Phe Asp Asn Asp Asp Asn Val Glu Leu Phe Arg Lys Asn Gly Ile  
 85 90 95  
 Ile Ala Ile Ala Gln Asp Tyr Lys Ser Arg Phe Ser Asn Ile Pro Asn

[illegible]

<400> 8242

Gln	Arg	Ser	Lys	Ile	Ile	Leu	Leu	Ile	Phe	Ser	Ser	Ile	Val	Thr	Asn
1				5					10					15	
Leu	Ser	Ser	Ser	Asn	Pro	Thr	Thr	Ser	Arg	Gly	Ser	Ser	Ala	Thr	Pro
			20					25					30		
Ile	Tyr	Arg	Ser	Pro	Pro	Ala	Ser	Leu	Ala	Asn	Ala	Thr	Thr	Val	Leu
		35					40					45			
Ala	Lys	Ser	Glu	Cys	Ser	Gly	Asn	Ser	Ala	Leu	Asn	Ser	Asn	Leu	Arg
	50					55					60				
Pro	Ser	Asp	Trp	Phe	Ser	Ile	Ser	Phe	Met	Phe	Ile	Leu	Leu	Leu	Phe
65					70					75					80
Cys	Phe	Val	Ile	Asn	Leu	Trp	Gln	Val	Ile	Glu	Asn	Leu	Leu	Asp	Asp
				85					90					95	
Lys	Asp	Arg	Lys	Arg	Lys	His	Ser	Phe	Arg	Ser	Ile	Phe	Asn	Val	Ile

	100		105		110
Phe Tyr Leu Val Lys Thr Gly Cys Gln Trp Arg Met Leu Pro Cys Asp					
	115		120		125
Phe Ala Leu Trp Asn Thr Val					
	130		135		

<210> 8243  
 <211> 291  
 <212> PRT  
 <213> B.fragilis

<400> 8243

Lys Asn Met Asn Ser Lys Tyr Leu Ser Leu Pro Lys Thr Lys Lys Tyr					
1	5		10		15
Ile Gln Lys Lys Tyr Leu Gln Phe Lys Glu Ile Arg Asn Pro Lys Arg					
	20		25		30
Gln Thr Ile Tyr Phe Val Tyr Tyr Gly Thr Val Gly Cys Phe Ser Ile					
	35		40		45
Gly Ile Ile Ala Asp Leu Cys Val Tyr Leu Ile Arg Lys Asp Leu Leu					
	50		55		60
Leu Ala Leu Cys Asn Ile Leu Ser Leu Gly Leu Phe Leu Leu Phe Thr					
65	70		75		80
Tyr Leu Leu Ile Arg Lys Lys Lys Gln Ile Thr Phe Leu Leu Lys Cys					
	85		90		95
Thr Phe Tyr Thr Ile Gln Ser Asn Ile Leu Ile Ser Met Tyr Cys Arg					
	100		105		110
Ile Tyr Leu Pro Pro Glu Glu Thr Gly Phe Phe Leu Ser Gln Asp Leu					
	115		120		125
Met Ile Gly Met Val Thr Cys Gly Leu Ala Ser Ile Ser Val Ser Arg					
	130		135		140
His Thr Val Met Ile Leu Ser Phe Ala Pro Ile Leu Leu Tyr Met Phe					
145	150		155		160
Ile Gly Val Tyr Thr Ser Ser Glu Leu Tyr Leu Met Ser Leu Pro Ser					
	165		170		175
Leu Ala Val Ala Tyr Ile Phe Pro Pro Ile Met Leu Ala Arg Leu Gln					
	180		185		190
Glu Ile Leu Arg Thr Met Gln Arg Gln Lys Ala Arg Met Thr Ser Glu					
	195		200		205
Leu Lys Leu Trp Ala Ala Phe Asn Ala Leu His Leu Gln Pro Ser Ser					
	210		215		220
Lys Glu Ile Gln Leu Cys Cys Leu Ile Leu Glu Asn Lys Thr Thr Glu					
225	230		235		240
Glu Ile Ala Ala Leu Gln Tyr Ile Ala Thr Ser Thr Val Arg Ser Asn					
	245		250		255
Arg Ser Arg Leu Arg Gln Lys Leu Gln Leu Asn Gln Glu Thr Asp Leu					
	260		265		270
Gln Thr Phe Leu Ser Glu Leu Ile Lys Lys Asp Phe Asp Tyr Leu Glu					
	275		280		285
Ser Pro Asp					
	290				

<210> 8244  
 <211> 85  
 <212> PRT  
 <213> B.fragilis

<400> 8244

Lys Ile Ser Glu Gln Asp Glu Ser Leu Phe Ala Asp Ala Phe Arg Ile					
1	5		10		15



Phe	Ala	Glu	Leu	Ser	Trp	Ala	Asp	Ile	Tyr	Asn	Ser	Glu	Gly	Leu	Asp
		20					25					30			
Tyr	Lys	Glu	Tyr	Thr	Asn	Lys	Gln	Lys	Asp	Ser	Phe	Ala	Ile	Phe	Arg
	35					40					45				
Ser	Lys	Lys	Ile	Phe	Lys	Phe	Arg	Ile	Thr	Gln	Lys	Tyr	Arg	Cys	Phe
	50				55					60					
Gly	Glu	Val	Val	Asn	Gly	Val	Phe	His	Val	Leu	Met	Phe	Asp	Leu	Thr
65					70					75					80
His	Lys	Leu	Ser	Asp											
				85											

&lt;210&gt; 8245

&lt;211&gt; 397

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8245

Arg	Lys	Asn	Asp	Lys	Ala	Met	Lys	Asn	Met	Glu	Lys	Ser	Tyr	Lys	Arg
1				5				10					15		
Ile	Leu	Leu	Leu	Gly	Ile	Gly	Phe	Ile	Leu	Cys	Gly	Thr	Leu	Ala	Ala
		20					25					30			
Gln	Glu	Gln	Lys	Gln	Asp	Ser	Thr	Glu	Gly	Lys	Asn	Asn	Ile	Lys	Ala
	35					40					45				
Ser	Glu	Tyr	Leu	Met	Pro	Lys	Arg	Lys	Gly	Ala	Glu	Lys	Phe	His	Ser
	50					55				60					
Lys	Arg	Gly	Ser	Glu	His	Leu	Phe	Phe	Ser	Val	Gly	Ser	Gly	Ile	Gly
65					70					75					80
Tyr	Leu	Phe	Asn	Val	Gly	Gly	Gly	Gln	Thr	Ala	His	Gly	Pro	Arg	Ala
				85					90					95	
Ser	Phe	Met	Ala	Gly	Asn	Trp	Leu	Thr	Pro	Val	Ile	Gly	Leu	Arg	Ala
			100					105					110		
Gly	Gly	Glu	Tyr	Thr	Gln	Trp	Lys	Gln	Gly	Asn	Thr	Asn	Met	His	Leu
		115					120					125			
Ala	Gly	Ala	Asn	Val	Asp	Tyr	Leu	Ile	Asn	Ile	Ser	Ala	Phe	Ala	Ala
	130					135					140				
Arg	Tyr	Asn	Pro	Lys	Arg	Val	Phe	Glu	Val	Ile	Gly	Ala	Leu	Gly	Leu
145					150					155					160
Ser	Tyr	Gln	Ala	Thr	Ile	Val	Lys	Asp	Gln	Lys	Thr	Ile	His	Ser	Tyr
				165					170					175	
Gly	Leu	Arg	Ala	Gly	Leu	Gln	Gly	Lys	Leu	Asn	Val	Ser	Ser	Ala	Phe
			180					185						190	
Asn	Leu	Phe	Ile	Glu	Pro	Gln	Leu	Ala	Leu	Tyr	Pro	Asp	Arg	Val	Asp
		195					200					205			
Asn	Gln	Ser	Ser	Trp	Lys	Arg	Tyr	Asn	Leu	Ala	Gly	Ser	Leu	Met	Ala
	210					215						220			
Gly	Ile	Thr	Tyr	Lys	Pro	Ala	Gly	Tyr	Ala	Thr	Leu	Thr	Phe	Leu	Lys
225					230					235					240
Gly	Gly	Phe	Ala	Ser	Leu	Ala	Ala	Gly	Thr	Gly	Asn	Thr	Gly	Asn	Val
				245					250					255	
Leu	Phe	Asp	Thr	Glu	Phe	Ala	Leu	Gly	Lys	Trp	Phe	Asp	Lys	Phe	Asn
			260					265					270		
Gly	Met	Arg	Ile	Ser	Ala	Gly	Ser	Ser	Thr	Ala	Phe	Leu	Asp	Asn	Glu
		275						280					285		
Asp	Ser	Gly	Ser	Asn	Arg	Asp	Phe	Asn	Ile	Ser	Leu	Asn	Ile	Asp	Tyr
	290					295						300			
Leu	Cys	Ser	Leu	Thr	Arg	Leu	Phe	Ser	Asp	Arg	Asp	Ser	His	Val	Phe
305					310					315					320
Asn	Leu	Ile	Val	Ala	Gly	Gly	Ile	Gly	Ser	Tyr	Phe	Pro	Gly	Ala	Glu
				325					330					335	

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Ser Ser Ser Ser Ile Ile Leu Asn Gly Arg Ile Gly Leu Gln Gly Glu  
                   340                  345                  350  
 Ile Arg Leu Ser Ala His Ser Gly Leu Trp Leu Glu Pro Arg Ile Asn  
                   355                  360                  365  
 Ile Phe Lys Asp Arg Ser Tyr Arg Ala Asp Leu Gln Glu Pro Ile Arg  
                   370                  375                  380  
 Gly Thr Val Gly Leu Met Val Gly Thr Thr Tyr Lys Phe  
 385                  390                  395

&lt;210&gt; 8246

&lt;211&gt; 143

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8246

Asn Ile Phe Leu Gln Lys Ser Ser Cys Asp Gly Leu Leu Pro Gly Ser  
 1                  5                  10                  15  
 Arg Leu His Arg Leu Glu Asp Asn Thr Ile Ala Leu Leu Thr Phe Gly  
                   20                  25                  30  
 Lys Lys Asp Gly Lys Glu Ala Met Phe Phe Phe Arg Met Asn Pro Asn  
                   35                  40                  45  
 Thr Thr Gly Ala Lys Asn Arg Ala Lys Arg Ile Ala Ala Cys Ile Arg  
                   50                  55                  60  
 Asn Phe Asp Arg Lys Cys Glu Glu Gln Leu Phe Ser Arg Arg Trp Gly  
 65                  70                  75                  80  
 Ile Ser Phe Val Ser Ala Thr Gly Leu His Ser Gly Ile Pro Leu Val  
                   85                  90                  95  
 Phe Ala Asn Lys Val Asn Lys Pro Val Ala Asp Tyr Leu Lys Glu Asn  
                   100                  105                  110  
 Arg Lys Arg Asn Cys Gly Ile Val Phe Ile Asp Phe Ile Glu Ser Ser  
                   115                  120                  125  
 Gly Gly Gln Lys Leu Val Glu Tyr Leu Ile Gly Gly Asn Ile Tyr  
                   130                  135                  140

&lt;210&gt; 8247

&lt;211&gt; 184

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8247

Ser Gly Ala Asp Gly Lys Ser Ala Pro Val Asp Ile Phe Phe Leu Ser  
 1                  5                  10                  15  
 Glu Arg Glu Glu Tyr Glu Thr Lys Met Lys Lys Leu Leu Pro Ile Leu  
                   20                  25                  30  
 Leu Gly Val Thr Leu Leu Leu Asn Ser Cys Ile Lys Asp Asp Met Asp  
                   35                  40                  45  
 Ala Cys Ala Gly Tyr Met His Ile Tyr Phe Ser Tyr Ile Tyr Gly Gly  
                   50                  55                  60  
 Ala Asn Arg Phe Phe Glu Thr Val Ser Thr Pro Thr Gln Leu His Phe  
 65                  70                  75                  80  
 Tyr Lys Gln Lys His Lys Tyr Arg Glu Leu Glu Ile Ala Val Asp Glu  
                   85                  90                  95  
 Ile Gly Leu Thr Glu Pro Tyr Arg Phe Leu Lys Asn Phe Asp Asp Thr  
                   100                  105                  110  
 Asp Ser Leu Glu Leu Ile Ala Trp Thr Gln Asp Glu Ala Ile Asp Tyr  
                   115                  120                  125  
 Val Asp Thr Pro Asp Thr Pro Ile Gly Glu Gly Tyr Val Lys Leu Lys  
                   130                  135                  140  
 Glu Ile Thr Asp Gly Ser Gly Ile Cys Arg Pro Val Asp Asp Leu Leu

145 150 155 160  
 Tyr Gly Arg Ile Ala Ile Asp Ala Gly Leu Arg Glu Asn Arg Ser Ser  
 165 170 175  
 Pro Arg Gly Trp Lys Asp Gln Gln  
 180

<210> 8248  
 <211> 565  
 <212> PRT  
 <213> B.fragilis

<400> 8248  
 Lys Tyr Lys Leu Phe Glu Leu Ile Ser Ile Ile Lys Phe Phe Ser Asn  
 1 5 10 15  
 Met Lys Leu Asn Lys Leu Phe Thr Phe Thr Leu Ala Ala Leu Ala Met  
 20 25 30  
 Ala Ala Cys Ser Asn Asp Asp Glu Pro Gly Ile Asp Lys Gly Gly Gln  
 35 40 45  
 Lys Gly Glu Leu Ile Asp Ala Ile Ser Ile Ala Phe Thr Ser Ser Ser  
 50 55 60  
 Ala Pro Ala Thr Arg Ala Asp Lys Gly Glu Ile Glu Gly Val Gly Thr  
 65 70 75 80  
 Glu Asn Asn Val Tyr Val Ala Tyr Leu Phe Ala Lys Glu Asn Asp Pro  
 85 90 95  
 Gln His Glu Gly Ala Lys Val Gly Asp Trp Thr Val Lys Arg Val Ala  
 100 105 110  
 Gly Asp Ala Asn Thr Glu Asp Lys Asp Val Ala Ala Ala Ile Gly Glu  
 115 120 125  
 Gly Asp Val Ala Thr Pro Gly Thr Lys Lys Asn Met Cys Thr Phe Asn  
 130 135 140  
 Gly Val Arg Gln Gly Asp Ser Val Tyr Val Val Val Asn Asp Pro Gln  
 145 150 155 160  
 Met Thr Leu Ala Thr Ala Gln Thr Leu Ala His Gln Gly Asp Lys Ser  
 165 170 175  
 Glu Ala Ala Ile Arg Ala Tyr Ile Ser Asn Leu Ser Lys Ser Tyr Leu  
 180 185 190  
 Asn Glu Leu Thr Val Thr Lys Asp Gly Thr Gln Gly Lys Lys Tyr Ile  
 195 200 205  
 Met Ala Gly Val Ser Ala Ile Pro Thr Asn Pro Asn Ile Pro Asn Gly  
 210 215 220  
 Ser Thr Val Lys Val Ser Ile Pro Leu Asn Arg Glu Leu Ala Lys Val  
 225 230 235 240  
 Phe Phe Asn Ala Ser Val Thr Thr Asn Pro Val Tyr Glu Ala Tyr Gly  
 245 250 255  
 Lys Met Ala Ile Lys Asp Ala Glu Trp Glu Asn Pro Thr Gly Thr Lys  
 260 265 270  
 Asp Pro Asp Gly Ile Val Val Val Arg Ile Pro Arg Arg Val Ser Pro  
 275 280 285  
 Phe Thr Ala Gln Ala Arg Asp Trp Tyr Phe Pro Gln Ser Ala Asp Ala  
 290 295 300  
 Thr Ala Lys Asp Trp Asp Val Glu Gly Trp Leu Lys Ala Phe Ala Gly  
 305 310 315 320  
 Glu Lys Glu Ser Ala Pro Gly Thr Ala Glu Val Ala Gly Thr Thr Ser  
 325 330 335  
 Ala Leu Asn Lys Gly Glu Tyr Asn Ala Asp Ala Lys Glu Tyr Arg Leu  
 340 345 350  
 Thr Trp Val Val Gly Glu Lys Ala Leu Ala Asp Gly Ala Thr Pro Ala  
 355 360 365  
 Ala Ala Ser Met Val Tyr Val Lys Ser Asp Lys Leu Tyr Ser Pro Tyr

145 150 155 160  
 Tyr Gly Arg Ile Ala Ile Asp Ala Gly Leu Arg Glu Asn Arg Ser Ser  
 165 170 175  
 Pro Arg Gly Trp Lys Asp Gln Gln  
 180

370		375		380
Phe Tyr Val Thr Pro Asn Tyr Ala Asp Asn Ala Gly Cys Ala Thr Val				
385		390		400
Val Val Thr Gln Ala Thr Tyr Ile Gly Ala His Thr Leu Leu Glu Pro				
	405		410	415
Thr Ile Thr Glu Gln Met Leu Lys Glu Ala Leu Asp Asp Ser Asp Phe				
	420		425	430
Gln Thr Ala Thr Ser Thr Asp Gly Ser Val Thr Tyr Asp Lys Leu Ala				
	435		440	445
Ala Asn Phe Trp Asp Thr Gly Ala Asn Val Thr Ala Leu Val Thr Phe				
	450		455	460
Leu Glu Lys Asp Ala Thr Tyr Lys Leu Ala Leu Arg Gly Glu Thr Glu				
465		470		480
Gln Ala Lys Lys Glu Ala Ala Ile Thr Ile Lys Pro Asn Asp Lys Arg				
	485		490	495
Tyr Tyr Arg Ala Asp Val Ala Asn Tyr Ser Asp Asp Glu Thr Thr Ser				
	500		505	510
Met Lys Ile Thr Glu Arg Asn Thr Phe Tyr His Ile Thr Gly Thr Ile				
	515		520	525
Thr Thr Leu Gly Ala Lys Ser Ile Glu Asp Ala Ile Asn Ser Asp Asn				
	530		535	540
Ile Asp Met Leu Val Gln Val Val Val Lys Pro Trp Lys Tyr Val Val				
545		550		560
Asn Asn Ile Asn Met				
	565			

<210> 8249  
 <211> 391  
 <212> PRT  
 <213> B.fragilis

<400> 8249
Asn Glu Gly Arg Pro Asp Thr Phe Val Ile Thr Gly Asp Ile Asp Ala
1 5 10 15
Met Trp Leu Arg Asp Ser Ser Ala Gln Val Trp Pro Tyr Leu Pro Leu
20 25 30
Met Lys Asp Asp Lys Glu Leu Gln Leu Ile Ala Gly Leu Ile Asn
35 40 45
Arg Gln Ala Glu Cys Ile Arg Ile Asp Pro Tyr Ala Asn Ala Phe Asn
50 55 60
Asp Gly Pro Leu Gly Ser Tyr Trp Glu Thr Asp His Thr Gln His Met
65 70 75 80
Val Lys Glu Leu His Glu Arg Lys Trp Glu Ile Asp Ser Leu Cys Tyr
85 90 95
Pro Ile Arg Leu Ala Tyr His Tyr Trp Leu Leu Thr Lys Asp Ile Ser
100 105 110
Ala Phe Asp Ala Asp Trp His Glu Thr Met Lys Leu Val Val Gln Thr
115 120 125
Phe Lys Glu Gln Gln Arg Lys Gln Gly Leu Gly Pro Tyr Ser Phe Thr
130 135 140
Arg Asp Cys Asp Arg Pro Thr Asp Ser Gln Ile Asn Asn Gly Trp Gly
145 150 155 160
Ala Pro Val Lys Pro Val Gly Leu Ile Val Ser Ser Phe Arg Pro Ser
165 170 175
Asp Asp Ala Thr Gln Tyr Gly Phe Leu Ile Pro Ser Asn Met Phe Ala
180 185 190
Val Val Ser Leu Arg Gln Leu Ala Glu Ile Glu Arg Glu Val Tyr Asp
195 200 205
Asn Leu Pro Phe Ala Glu Glu Cys Thr Ala Leu Ala Asp Glu Val Asp

210	215	220
Ala Ala Ile Arg Arg Tyr Gly Thr Phe Asn His Pro Val Cys Gly Arg		
225	230	235
Ile Tyr Ala Phe Glu Val Asp Gly Phe Gly Asn Ala Leu Cys Met Asp		240
	245	250
Asp Ala Asn Val Pro Cys Leu Leu Ala Ala Pro Tyr Leu Gly Tyr Cys		255
	260	265
Ser Phe Lys Asp Ala Val Tyr Arg Asn Thr Arg Lys Met Ile Trp Ser		270
	275	280
Glu Asn Asn Pro Tyr Phe Phe Lys Gly Lys Ala Gly Glu Gly Val Gly		285
	290	295
Gly Pro His Val Gly Leu Asn Tyr Ile Trp Pro Met Ser Ile Ile Met		300
305	310	315
Lys Ala Phe Thr Thr Asp Ala Pro Glu Glu Ile Arg Ser Cys Leu Lys		320
	325	330
Gln Leu Arg Asp Thr Asp Gly Gly Thr Gly Phe Met His Glu Ser Phe		335
	340	345
Asn Ser Glu Asn Ala Ala Asp Phe Thr Arg Ser Trp Phe Ala Trp Thr		350
	355	360
Asn Thr Leu Phe Gly Glu Leu Ile Leu Lys Ile Ile Arg Glu Tyr Pro		365
	370	375
Gly Leu Leu Ser Gln Ala Leu		380
385	390	

&lt;210&gt; 8250

&lt;211&gt; 62

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8250

Glu Val Thr Arg Glu Asn Pro Val Leu Ser Ala Ala Phe Gln Gly Glu		
1	5	10
Lys Arg Leu Leu Ser Ile Ile Tyr Arg Leu Ala Ala Asp Lys Lys Leu		15
	20	25
Thr Ser Tyr Lys Gln Arg Ile Asn Phe Leu Pro Ala Lys Asn Glu Leu		30
	35	40
Phe Ala Thr Thr Leu Phe Thr Ser Tyr Gly Gln Lys Ser Glu		45
	50	55
		60

&lt;210&gt; 8251

&lt;211&gt; 207

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8251

Thr Glu Val Ser Ala Phe Met Asn Thr Phe Asn Leu Lys Leu Asp Phe		
1	5	10
Pro Asn Leu Leu Trp Glu Ile Ala Gly Tyr Asn Phe Pro Ser Leu Phe		15
	20	25
Gly Lys Arg Ala Ile Leu Phe Ile Phe Ile Ala Ile Ser Phe Gln Val		30
	35	40
Ser Ala Gln Arg Met Ala Ile Lys Thr Asn Thr Leu Glu Trp Leu Ala		45
	50	55
Ala Ser Pro Asn Leu Gly Val Glu Phe Pro Leu Asn Asp Trp Met Thr		60
65	70	75
Ala Glu Ile Ser Ala Ser Ala Asn Pro Trp Lys Ile Thr Asp Lys Leu		80
	85	90
Phe Tyr Arg His Gly Arg Ile Gln Ala Glu Ala Lys Tyr Trp Leu Arg		95
	100	105
		110

Asn	Leu	Leu	Ala	Arg	His	Tyr	Ile	Gly	Ile	Thr	Gly	Phe	Tyr	Ser	Met
	115						120					125			
Phe	Asp	Val	Gly	Ile	Asn	Arg	Arg	Ala	Tyr	Tyr	Gly	Asp	Ala	Ala	Ala
	130					135					140				
Ala	Gly	Val	Thr	Tyr	Gly	Tyr	Asn	Trp	Ile	Leu	Ser	Arg	Arg	Trp	Asn
	145				150					155					160
Leu	Glu	Val	Ser	Gly	Gly	Val	Gly	Val	Ala	Arg	Tyr	Arg	Leu	Val	Arg
			165						170					175	
Tyr	Gln	Pro	Gly	Ser	Thr	His	Asp	Glu	Pro	Asn	Glu	Ser	Gly	Trp	Ala
		180					185						190		
Pro	Ile	Pro	Val	Lys	Leu	Ser	Val	Ser	Phe	Ile	Tyr	Ile	Ala	Lys	
	195						200					205			

&lt;210&gt; 8252

&lt;211&gt; 376

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8252

Ser	Arg	Gly	Gly	Gln	Ala	Met	Asn	Ile	Lys	Gln	Val	Ile	Phe	Ile	Asn
1				5					10					15	
Ile	Ser	Phe	Phe	Ile	Ser	Leu	Thr	Val	Leu	Ala	Ala	Asp	Arg	Pro	Thr
		20					25					30			
Gln	Pro	Val	Arg	Thr	Glu	Val	Tyr	Arg	Leu	Glu	Arg	Leu	Asp	Ser	Val
	35					40					45				
Leu	Leu	Val	Asp	Leu	Ala	Val	Asp	Leu	Thr	Gly	Val	His	Leu	Ala	Pro
	50					55				60					
Asp	Cys	Thr	Val	Tyr	Leu	Phe	Pro	Leu	Leu	Ala	Ser	Glu	Asn	Thr	Gly
65				70					75					80	
Asp	Ser	Leu	Ser	Leu	Pro	Pro	Ile	Val	Leu	Asn	Gly	Pro	Gln	Ser	Asp
			85					90					95		
Leu	Met	Tyr	Arg	Arg	Arg	Arg	Ala	Leu	Gly	Thr	Thr	Ser	Gly	Leu	Glu
			100					105					110		
Lys	Ile	Thr	Pro	Tyr	Thr	Val	Leu	Arg	Glu	Gly	Asp	His	Ala	Leu	Pro
	115					120						125			
Arg	Ile	His	Tyr	Arg	Thr	Glu	Val	Pro	Tyr	Ala	Ala	Trp	Met	Asp	Asp
	130				135					140					
Val	Lys	Val	Trp	Met	Arg	Asp	Thr	Asn	Cys	Asn	Cys	Asp	Ala	Arg	Leu
145				150					155						160
Val	Pro	Phe	Ala	Met	His	Thr	Glu	His	Ile	Pro	Pro	Leu	Val	Val	Glu
			165					170					175		
Arg	Val	Asp	Thr	Ile	Val	Ile	His	Asp	Thr	Ile	Arg	Leu	Ala	Ser	Val
		180					185					190			
Ala	Ser	Gly	Gln	Ser	Thr	Val	Ala	Ser	Asp	Ile	Pro	Leu	Arg	Lys	Lys
	195					200					205				
Val	Thr	Arg	Ile	Gln	Ala	Gly	Tyr	Glu	Ala	Asp	Ile	Tyr	Phe	Pro	Thr
	210				215						220				
Asn	Glu	Met	Arg	Ile	Leu	Pro	Asp	His	Glu	Leu	Asn	Arg	Ala	Ser	Trp
225				230					235						240
Met	His	Phe	Val	Asn	Gln	Val	Asp	Ser	Ile	Glu	Gln	Asp	Asn	Arg	Asn
			245					250					255		
Ser	Ile	Ser	Gly	Val	Thr	Val	Thr	Gly	Tyr	Ser	Ser	Pro	Glu	Gly	Tyr
		260					265					270			
Thr	Ser	Asn	Asn	Glu	Arg	Leu	Ala	Glu	Lys	Arg	Ala	Lys	Ala	Leu	Gln
	275					280					285				
Ala	Phe	Leu	Glu	Asn	Lys	Tyr	Gly	Glu	Arg	Met	Glu	Val	Ala	Val	Glu
	290				295					300					
Trp	Val	Gly	Glu	Asp	Trp	Lys	Gln	Phe	Glu	Lys	Asp	Ile	Glu	Val	Ser
305					310				315						320

Asp Leu Pro Glu Arg Asn Glu Ile Leu Ser Ile Leu Arg Thr Val Ser  
                                   325                                  330                                  335  
 Asp Ser Asn Gln Arg Lys Ser Arg Leu Lys Ala Leu Asn Lys Gly Lys  
                                   340                                  345                                  350  
 Thr Phe Glu Ile Leu Leu Arg Glu Tyr Phe Pro Lys Leu Arg Arg Val  
                                   355                                  360                                  365  
 Ser Cys Arg Ile Arg Tyr Val Lys  
                                   370                                  375

<210> 8253  
 <211> 193  
 <212> PRT  
 <213> B.fragilis

<400> 8253  
 Lys Arg Phe Met Val Pro Val Ala Ile Asn Asn Asp Ser Asn Cys Phe  
 1                                  5                                  10                                  15  
 Thr Leu Gly Lys Ser Met Phe Gly Glu Gly Lys Pro Tyr Ala His Met  
                                   20                                  25                                  30  
 Val Gly Val Thr Ile Gly Thr Gly Ile Gly Ala Gly Val Ile Ile Asn  
                                   35                                  40                                  45  
 His Arg Leu Tyr Cys Gly Gln Tyr Met Gly Ala Gly Glu Ile Gly Ser  
                                   50                                  55                                  60  
 Leu Pro Tyr Leu Asp Ser Asp Phe Glu His Tyr Cys Ser Ser Ser Phe  
 65                                  70                                  75                                  80  
 Phe Lys Arg His Asp Thr Thr Gly Val Val Val Ala Glu Lys Ala Glu  
                                   85                                  90                                  95  
 Arg Gly Asp Gly Ala Ala Leu Glu Ile Trp Arg Glu Phe Gly Thr His  
                                   100                                  105                                  110  
 Leu Gly Asn Leu Met Lys Val Ile Leu Phe Ser Tyr Ala Pro Gln Ala  
                                   115                                  120                                  125  
 Ile Ile Leu Gly Gly Ser Ile Val Ser Ala Phe His Phe Phe Lys Asp  
                                   130                                  135                                  140  
 Thr Met Lys Asp Ala Met Gln Asp Phe Pro Tyr Lys Ile Leu Leu Asp  
 145                                  150                                  155                                  160  
 Asn Val Lys Ile Ile Thr Ser Tyr Leu Lys Asp Ala Ser Leu Leu Gly  
                                   165                                  170                                  175  
 Ala Ser Ala Leu Phe Glu Lys Gln Tyr Leu Pro Ile Ser Ile Ile Asp  
                                   180                                  185                                  190  
 Asn

<210> 8254  
 <211> 381  
 <212> PRT  
 <213> B.fragilis

<400> 8254  
 Asn Lys Asn Met Lys Arg Met Tyr Tyr Ile Gly Tyr Met Leu Cys Leu  
 1                                  5                                  10                                  15  
 Leu Leu Ala Gly Cys Val Val Gly Glu Glu Ala Asp Gly Leu Leu Glu  
                                   20                                  25                                  30  
 Gln Arg Leu Ser Asp Arg Thr Leu Leu Val Tyr Met Gly Gly Asp Asn  
                                   35                                  40                                  45  
 Asp Leu Ala Asp Glu Thr Asp Glu Lys Leu Ser Ala Leu Thr Glu Ala  
                                   50                                  55                                  60  
 Trp Asp Arg Phe Pro Gly His Leu Leu Ile Tyr Gln Asp Lys Lys Gly  
 65                                  70                                  75                                  80  
 Ala Asp Ser Thr Arg Leu Leu Glu Val Cys Leu Asp Glu Gln Gly Glu

[illegible]

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<400> 8255
Ser Gly Cys Ile Val Phe Thr Gln Tyr Cys Phe Leu Phe Ala Gln Lys
1          5          10          15
Ser Phe Phe Phe Val Thr His Thr Leu Phe Phe Ser Phe Val Ile Glu
          20          25          30
Val Val Tyr Cys Ile Tyr Met Gln Lys Glu Asn Val Phe Glu Ser Leu
          35          40          45
Asn Asn Met Leu Phe Thr Phe Leu Pro Ile Gly Ser Glu
          50          55          60

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<400> 8256



Lys Asn Gly Ile Ala His Leu Gln His Pro Glu Lys Gly Arg Cys Cys  
 1 5 10 15  
 Lys Asn Ala Thr Leu Ile Phe Arg Leu Ser Ser Gly Arg Arg Leu His  
 20 25 30  
 Leu Ser Tyr Pro Leu Trp Arg Glu Met Gln Thr Lys Cys Ile Arg Leu  
 35 40 45  
 Phe Lys Ile Val Lys Leu Gly Ser Cys Gln His Ile Asp Ser Arg Cys  
 50 55 60  
 Cys Phe Thr Phe Val Asn Gln Leu Lys Val Lys Lys Met Thr Ser  
 65 70 75 80  
 Ile Thr Pro Arg Leu Asn Arg Ser Arg Glu Gly Arg Asp Gly Ser Tyr  
 85 90 95  
 Pro Leu Val Ile Gln Ile Ile Arg His Arg Lys Lys Arg Glu Ile Tyr  
 100 105 110  
 Thr Pro Tyr Arg Phe Trp Glu Ala Glu Phe Asn Thr Arg Leu Glu Met  
 115 120 125  
 Val Glu Asn Val Gly Gly Asn Arg Arg Arg Leu Leu Ile Val Arg Glu  
 130 135 140  
 Ala Asn Glu Tyr Leu Ile Tyr Ile Lys Lys Glu Leu Glu Ala Ile Cys  
 145 150 155 160  
 Arg Ser Leu Glu Ala Asp Lys Gly Ser Ala Tyr Thr Val Asp Asp Ile  
 165 170 175  
 Val Asn Val Tyr Asn Tyr His Asn Asp Leu Ser Gln Val Leu Val Tyr  
 180 185 190  
 Ala Asp Ser Val Ile Ala Gly Leu Glu Asn Lys Gly Arg Gln Gly Thr  
 195 200 205  
 Ala Ala Asn Tyr Arg Ser Ala Arg Arg Ala Phe Glu Met Phe Leu Asp  
 210 215 220  
 Gly Arg Pro Phe Ser Phe Glu Glu Leu Thr Pro Glu Val Leu Asp Arg  
 225 230 235 240  
 Phe Val Thr Phe Leu Arg Glu Arg Gly Asn Arg Pro Asn Thr Val Ser  
 245 250 255  
 Phe Tyr Leu Arg Gln Trp Arg Ala Ile Tyr Asn Arg Ala Cys Ala Asp  
 260 265 270  
 His Val Val Phe Ser Asp Gln Lys Pro Phe Arg Arg Leu Asn Leu Lys  
 275 280 285  
 Glu Glu Val Thr Ser Lys Arg Ala Ile Ser Arg Glu Lys Ile Ala Gln  
 290 295 300  
 Ile Glu Cys Val Asp Leu Thr Ala Cys His Ala Asp Met Gln Leu Ala  
 305 310 315 320  
 Arg Asp Leu Phe Leu Phe Ser Phe Tyr Thr Arg Gly Met Ser Phe Val  
 325 330 335  
 Asp Met Cys Tyr Leu Asn Lys Glu Asn Leu Gln Gly Asn Tyr Leu Arg  
 340 345 350  
 Tyr Lys Arg Gln Lys Thr Gly Gln Glu Leu Gln Ile Arg Ile Glu Lys  
 355 360 365  
 Asp Leu Arg Val Leu Ile Asp Arg Tyr Ala Ser Pro Leu Ser Asp Tyr  
 370 375 380  
 Leu Leu Pro Met Leu Arg Asn Gly Asp Arg Tyr Gln Asp Tyr Arg Arg  
 385 390 395 400  
 Arg Gln Arg Arg Leu Asn Lys Leu Ile Arg Glu Leu Gly Asp Arg Leu  
 405 410 415  
 Gln Leu Asp Met Pro Leu Thr Phe Tyr Val Ala Arg His Ser Trp Ala  
 420 425 430  
 Thr Leu Ala His Glu Asn Asp Val Pro Val Ser Val Ile Ser Asp Cys  
 435 440 445  
 Met Gly His Thr Ser Glu Lys Thr Thr Arg Ile Tyr Leu Asp Arg Ile  
 450 455 460  
 Asp Thr Lys Arg Leu Asp Arg Ala Asn Arg Leu Val Ile Asn Ser Leu

465  
Arg

470

475

480

<210> 8257  
<211> 290  
<212> PRT  
<213> B.fragilis

<400> 8257

His	Asn	Ala	Met	Glu	Lys	Ile	Ile	Leu	Leu	Val	Leu	Pro	Phe	Phe	Ala
1				5				10						15	
Ala	Ser	Cys	Gly	Leu	Val	Lys	Gln	Gln	Ala	Ser	Ala	Pro	Glu	Pro	Val
			20					25					30		
Asn	Val	Met	Ser	Phe	Asn	Ile	Arg	Tyr	Asp	Asn	Pro	Glu	Asp	Ser	Leu
		35					40					45			
Asp	Asn	Trp	Arg	Tyr	Arg	Lys	Asp	Arg	Val	Ala	Asn	Ala	Ile	His	Phe
	50					55					60				
Tyr	Asp	Val	Asp	Ile	Leu	Gly	Thr	Gln	Glu	Val	Leu	His	Asn	Gln	Leu
65					70				75					80	
Glu	Asp	Leu	Lys	Leu	Arg	Leu	Pro	Glu	Tyr	Gly	Val	Val	Gly	Val	Gly
			85						90					95	
Arg	Glu	Asp	Gly	Lys	Glu	Lys	Gly	Glu	Tyr	Ser	Ala	Leu	Trp	Tyr	Lys
			100					105						110	
Lys	Asp	Arg	Phe	Asn	Val	Leu	Asp	Ser	Gly	Tyr	Phe	Trp	Leu	Ser	Glu
		115					120					125			
Thr	Pro	Glu	Val	Ala	Gly	Ser	Lys	Gly	Trp	Asp	Gly	Ala	Cys	Glu	Arg
	130						135				140				
Ile	Ala	Ser	Trp	Val	Lys	Leu	Gln	Asp	Lys	Val	Ser	Asp	Lys	Glu	Tyr
145					150					155				160	
Phe	Ala	Leu	Asn	Thr	His	Leu	Asp	His	Val	Gly	Gly	Met	Ala	Arg	Arg
				165					170					175	
Glu	Gly	Ile	Ser	Leu	Met	Leu	Asp	Arg	Val	Asn	Glu	Leu	Ser	Asp	Gly
			180					185					190		
Leu	Pro	Val	Ile	Val	Thr	Gly	Asp	Phe	Asn	Ser	Glu	Pro	Glu	Ser	Asp
		195					200					205			
Val	Ile	Lys	His	Val	Thr	Asp	Ser	Ala	Asn	Pro	Glu	His	Leu	Thr	Asp
	210					215					220				
Ala	Arg	Gln	Ala	Ser	Ser	Ile	Val	Tyr	Gly	Pro	Ser	Trp	Ser	Phe	His
225					230					235				240	
Asp	Phe	Gly	Lys	Ile	Pro	Tyr	Asn	Lys	Arg	Pro	Leu	Ile	Asp	Tyr	Val
			245						250					255	
Phe	Val	Arg	Asn	Gly	Leu	Lys	Val	Leu	Arg	Tyr	Gly	Ile	Leu	Ala	Glu
			260					265					270		
Thr	Glu	Asn	Asn	Gly	Phe	Leu	Ser	Asp	His	Thr	Pro	Val	Leu	Val	Thr
		275					280						285		
Val	Glu														
	290														

<210> 8258  
<211> 389  
<212> PRT  
<213> B.fragilis

<400> 8258

Thr	Lys	Thr	Ile	Phe	Pro	Met	Leu	Lys	His	Ile	Leu	Phe	Thr	Cys	Phe
1				5					10					15	
Phe	Phe	Phe	Thr	Ala	Ile	Pro	Leu	Leu	Lys	Ala	Gln	Gly	Cys	Gly	Asn
			20					25					30		

Asp Glu Lys Tyr His Leu Pro Tyr Lys Asn Thr Tyr Val Lys Glu Pro  
 35 40 45  
 Leu Val Ala Glu Asn Glu Tyr Arg Ile Ala Lys Pro Glu Thr Val Glu  
 50 55 60  
 Pro Lys Ser Phe Glu Glu Ala Arg Gln Ile Leu Pro Asn Pro Ile Trp  
 65 70 75 80  
 Ala Gly His Glu Lys Glu Leu Glu Met Tyr Trp Arg Ala Trp Glu Ile  
 85 90 95  
 Ala Val Gly Asn Ile Arg Ala Pro Gln Gln Gly Ser Gly Phe Val Ser  
 100 105 110  
 Ser Tyr Leu Asp Thr Ala Tyr Asn Gly Asn Ile Phe Met Trp Asp Ser  
 115 120 125  
 Ser Phe Ile Leu Met Phe Ala Arg Tyr Gly Thr Arg Phe Phe Pro Phe  
 130 135 140  
 Gln Arg Thr Leu Asp Asn Phe Tyr Ala Lys Gln His Pro Asp Gly Phe  
 145 150 155 160  
 Ile Cys Arg Glu Ile Lys Ala Asp Gly Ala Asp Cys Phe Glu Arg Tyr  
 165 170 175  
 Asp Pro Val Ser Thr Gly Pro Asn Leu Met Pro Trp Cys Glu Met Val  
 180 185 190  
 Tyr Tyr Tyr Gln Phe Gly Asp Thr Glu Arg Leu His Lys Ile Phe Pro  
 195 200 205  
 Val Leu Cys Ala Tyr Tyr Lys Trp Leu Lys Leu Asn Arg Thr Trp Arg  
 210 215 220  
 Asn Gly Thr Tyr Trp Ser Ser Gly Trp Gly Thr Gly Met Asp Asn Met  
 225 230 235 240  
 Pro Arg Val Pro Glu Gly Tyr Ser Pro Ile Tyr Ser His Gly His Met  
 245 250 255  
 Ile Trp Leu Asp Thr Asn Leu Gln Gln Leu Phe Thr Ala Asn Leu Leu  
 260 265 270  
 Leu Glu Met Gly Phe Tyr Leu Glu Arg Trp Gln Glu Ile Glu Glu Phe  
 275 280 285  
 Glu Asp Glu Ala Lys Met Leu Gly Lys Tyr Ile His Asp Asn Leu Trp  
 290 295 300  
 Asp Glu Lys Thr Gly Phe Leu Tyr Asp Gln Tyr Ala Asp Gly Thr Leu  
 305 310 315 320  
 Cys Lys Thr Lys Gly Ile Gly Ala Tyr Trp Thr Leu Leu Thr Asp Val  
 325 330 335  
 Leu Asp Asp Lys Gln Leu Asp Arg Met Val Lys Glu Leu Asp Asn Pro  
 340 345 350  
 Ala Thr Phe Ile Gly Asn Phe Val Phe Pro Leu Cys Arg Gln Ile Ile  
 355 360 365  
 Leu Ser Ile Lys Arg Thr Gly Val Ile Gly Lys Val Ala Tyr Gly Arg  
 370 375 380  
 Val Pro Thr Ile Trp  
 385

&lt;210&gt; 8259

&lt;211&gt; 715

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8259

Pro Asn Lys Ile Thr Leu Met Asn Ile Lys Arg Phe Leu Leu Leu Gly  
 1 5 10 15  
 Ile Met Ala Leu Tyr Ala Ile Ile Pro Ala Trp Gly Gln Ala Gln Lys  
 20 25 30  
 Val Glu Ile Arg Gly Ser Val Ile Asp Asp Glu Gly Glu Pro Ala Ile  
 35 40 45

Ser Ile Val Ile Arg Asp Gln Asn Glu Lys Gly Asp Val Tyr Gly Ile  
 50 55 60  
 Thr Asp Leu Asp Gly Lys Phe Lys Ile Met Ala Asp Pro Asn Thr Thr  
 65 70 75 80  
 Leu His Phe Ser Gly Phe Ala Tyr Ala Ser Lys Thr Val Lys Leu Lys  
 85 90 95  
 Gly Lys Thr Thr Ile Asn Val Val Ile Ser Tyr Glu Ala Ser Met Ile  
 100 105 110  
 Asp Glu Val Val Ile Thr Ala Lys Lys Val Val Asp Lys Leu Leu Pro  
 115 120 125  
 Glu Pro Thr Asp Ile Glu Ile Val Gly Asn Gln Tyr Ile Ile His Pro  
 130 135 140  
 Lys Val Lys Ile Pro Lys Glu Met Tyr Lys Pro Asn Thr Arg Ile Val  
 145 150 155 160  
 Val Gln Pro Met Leu Val Asn Ile Thr Arg Lys Thr Gln Ser Leu Phe  
 165 170 175  
 Arg Pro Ala Val Val Thr Gly Lys Glu Tyr Ala Ile Thr Leu Glu Arg  
 180 185 190  
 Met Met Glu Phe Asp Leu Ser Arg Asp Pro Leu Ala Ala Phe Gln Glu  
 195 200 205  
 Lys Thr Gln Lys Ile Asp Lys Asn Glu Val Ile Ala Tyr Val Asp Ser  
 210 215 220  
 Leu Tyr Met Asp Asn Pro Asp Asp Glu Cys Arg Cys Asp Ile Tyr Met  
 225 230 235 240  
 Tyr Leu Val Glu Tyr Lys Lys Leu Ala Tyr Lys Asp Thr Val Val Ile  
 245 250 255  
 Ala Lys Gly Thr Val Asn Pro Met Arg Phe Phe Thr Tyr Gln Ala Asp  
 260 265 270  
 Gly Met Lys Ile Arg Asp Glu Lys Tyr Ile Pro Lys Pro Gln Lys Gln  
 275 280 285  
 Gln Arg Gly Asp Arg Gly Glu Val Lys Leu Asn Phe Leu Ile Asn Ser  
 290 295 300  
 Ala Thr Ile Asp Glu Lys Asp Pro Asn Asn Gln Arg Glu Leu Glu Lys  
 305 310 315 320  
 Met Arg Leu Arg Leu Gln Glu Ile Glu Thr Asp Pro Asn Ser Glu Phe  
 325 330 335  
 Leu Ser Phe Ser Val Lys Gly Val Ser Ser Pro Glu Gly Pro Tyr Gln  
 340 345 350  
 Ser Asn Leu Lys Leu Ala Gln Lys Arg Thr Asp Ser Thr Leu Lys Arg  
 355 360 365  
 Ile Phe Gly Phe Leu Asn Gly Gly Thr Ile Asn Ala Ile Lys Asp Ser  
 370 375 380  
 Thr Tyr Thr Glu Gly Val Val Ala Ser Trp Glu Glu Val Ala Glu Leu  
 385 390 395 400  
 Met Glu Arg Asp Ser Leu Pro Thr Asp Lys Leu Arg Glu Ile Ile Asn  
 405 410 415  
 Cys Tyr Pro Asp Asn Met Ala Ser Gln Tyr Ser Arg Ile Leu Arg Leu  
 420 425 430  
 Pro Glu Tyr Arg Asn Val Ile Leu Thr Thr Tyr Leu Pro Arg Leu Arg  
 435 440 445  
 Arg Val Glu Tyr Ser Phe Asn Tyr Ser Val Met Arg Leu Leu Asn Asp  
 450 455 460  
 Glu Glu Ile Arg Ile Met Tyr Lys Gln Asp Tyr Lys Lys Leu Val Pro  
 465 470 475 480  
 Tyr Glu Phe Trp Arg Ile Tyr Leu Asp Ala Asp Asn Asp Ser Thr Arg  
 485 490 495  
 Glu Val Ile Cys Arg Gln Ala Leu Glu Gln Tyr Pro Lys Phe Met Ile  
 500 505 510  
 Met Ala Asn Glu Leu Ala Ala Leu Leu Ile Glu Gln Lys Lys Ala Asp

515	520	525
Ser Lys Leu Leu Glu Pro Phe Val Ser Arg Ser Ala Pro Thr Glu Leu		
530	535	540
Leu Cys Asn Gln Val Ile Ala Leu Met Asp Glu Arg Ala Tyr Asn Arg		
545	550	555
Ala Asp Ser Ile Ile Asp Phe Leu Pro Asp Asn Asp Met Thr Gln Asp		
565	570	575
Val Arg Ala Ile Val Gly Ala Tyr Asn Gly His Phe Glu Asp Ala Tyr		
580	585	590
Glu Arg Phe Gly Thr Gln Gly Gly Ile Asn Glu Val Val Leu Leu Met		
595	600	605
Ala Met Lys Gln Asn Glu Glu Ala Trp Glu Lys Ala Gln Glu Leu Pro		
610	615	620
Asp Glu Pro Leu Ser Tyr Tyr Leu Arg Ala Ala Cys Ala Asn Arg Leu		
625	630	635
Asp Lys Val Ser Glu Ala Tyr Ala Phe Ile Lys Arg Ala Met Asn Glu		
645	650	655
Asp Pro Ser Leu Lys Glu Ile Ala Gln Ile Asp Gly Asp Val Thr Asp		
660	665	670
Leu Leu Gln Gln Leu Glu Asp Glu Lys Lys Glu Leu Lys Glu Lys Ala		
675	680	685
Glu Lys Thr Lys Glu Lys Asn Glu Thr Glu Asp Thr Glu Thr Glu Glu		
690	695	700
Ser Gly Leu Asn Glu Glu Lys Thr Ile Lys Gln		
705	710	715

<210> 8260  
 <211> 487  
 <212> PRT  
 <213> B.fragilis

<400> 8260

Tyr Gln Arg Ile Met Lys Lys Leu Ile Ile Phe Leu Phe Val Leu Ser		
1	5	10
Gly Cys Val Pro Ala Val Val Phe Ala Gln Gln Gln Phe Ser Phe Lys		
20	25	30
Asp Gly Lys Phe Lys Ile Ala Gln Phe Thr Asp Leu His Trp Thr Pro		
35	40	45
Arg Ser Leu Ala Cys Thr Glu Thr Glu Ala Thr Ile Cys Ala Val Leu		
50	55	60
Lys Ala Glu His Pro Asp Ile Ala Ile Leu Ser Gly Asp Val Val Thr		
65	70	75
Glu Asp Pro Ala Ile Asp Gly Trp Lys Ser Val Ile Arg Ile Phe Asp		
85	90	95
Glu Ala Lys Val Pro Phe Val Val Thr Met Gly Asn His Asp Ala Glu		
100	105	110
His Met Ala Lys Asp Asp Ile Tyr Asp Leu Leu Leu Glu Ser Pro Tyr		
115	120	125
Tyr Ala Gly Ala Lys Gly Pro Glu Gly Ile Met Gly Cys Gly Asn Cys		
130	135	140
Val Ile Pro Val Tyr Gly Ser Arg Asn Arg Glu Lys Val Glu Ala Leu		
145	150	155
Leu Tyr Cys Met Asp Ser Asn Asp Tyr Gln Pro Asp Lys Leu Tyr Gly		
165	170	175
Pro Tyr Asp Trp Ile His Phe Asp Gln Ile Ala Trp Tyr Arg Lys Gln		
180	185	190
Ser Ala Arg Phe Thr Lys Glu Asn Asn Gly Asn Pro Val Pro Ala Leu		
195	200	205
Ala Phe Phe His Ile Pro Leu Leu Glu Tyr Asn Glu Ile Ala Gly Asp		

210		215		220
Gly Lys Thr Phe Gly	Asn Asn Arg Glu Gly Glu Val Ala Ser Ala Asn			
225		230		240
Ile Asn Ser Gly Met	Phe Ala Ser Phe Ile Asp Met Lys Asp Val Met			
	245		250	255
Gly Val Phe Ala Gly	His Asp His Asp Asn Asp Tyr Leu Gly Ile Asn			
	260		265	270
Lys Gly Ile Val Leu Gly	Tyr Gly Arg Val Thr Gly Ala Asp Ala Tyr			
	275		280	285
Gly Glu Leu Thr Arg Gly	Ala Arg Ile Ile Glu Leu Tyr Glu Gly Lys			
	290		295	300
Phe Arg Phe Asp Thr Trp	Ile Thr Thr Pro Ser Gly Arg Glu Ala Thr			
305		310		320
Tyr Tyr Tyr Pro Ser Gly	Leu Asn Ser Glu Glu Glu Arg Thr Ala Asp			
	325		330	335
Tyr Leu Pro Ala Val Lys	Asn Val Ser Ser Pro Lys Gln Gly Val Ala			
	340		345	350
Tyr Thr Tyr Tyr Glu Gly	Lys Cys Lys Arg Val Ala Gly Ile Ala Ser			
	355		360	365
Cys Leu Lys Val Lys Glu	Gly Val Met Lys Asn Ile Ser Ile Lys Glu			
	370		375	380
Ala Ala Val Ala Asn His	Phe Ala Tyr Asp Phe His Thr Leu Ile Gln			
385		390		400
Ile Pro Glu Lys Gly Ile	Tyr Arg Phe Tyr Thr Phe Ser Asp Asp Gly			
	405		410	415
Ser Met Leu Tyr Ile Asp	Gly Lys Leu Val Val Asp Asn Asp Gly Gly			
	420		425	430
His Ser Ala Arg Arg Ala	Glu Gly Lys Ile Ala Leu Glu Lys Gly Phe			
	435		440	445
His Glu Leu His Leu Leu	Tyr Phe Glu Asp Tyr Met Gly Gln Glu Leu			
	450		455	460
Glu Val Gly Phe Ser Gly	Leu Asp Phe Pro Glu Val Pro Leu Gln Asp			
465		470		480
Glu Met Leu Phe Leu Pro	Asn			
	485			

&lt;210&gt; 8261

&lt;211&gt; 189

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8261

Ser Gly Asn Val Tyr Arg	Lys Phe Arg Ile Pro Ser Leu Ser Ala Asp
1	5 10 15
His Pro Lys Tyr Lys Glu	Asn Gly Arg Tyr Trp Gln Gly Gly Ile Trp
	20 25 30
Pro Gly Thr Asn Tyr Met	Val Met Gln Gly Leu Val Lys Lys Gly Tyr
	35 40 45
His Lys Leu Ala Arg Glu	Ile Ala Leu Asn His Tyr Ala Glu Val Leu
	50 55 60
Glu Val Tyr Lys Asn Thr	Gly Thr Phe Trp Glu Tyr Tyr Ser Pro Glu
65	70 75 80
Lys Ala Glu Pro Gly Phe	Met Ala Arg Lys Glu Phe Val Gly Trp Thr
	85 90 95
Gly Leu Pro Pro Ile Ala	Glu Leu Ile Glu Phe Ile Ile Gly Ile Arg
	100 105 110
Gly Asp Tyr Val Asn Gln	Gln Ile Ile Trp Asp Met Asn Leu Thr Glu
	115 120 125
Thr Asn Gly Ile Glu Arg	Tyr Pro Phe Gly Ser Glu Gly Ile Ile Asn

130		135		140
Leu Lys Ala Glu Ala Arg Arg Ser Ala Asn Asp Glu Pro Arg Ile Ala				
145		150		155
Val Asp Thr Asn Ile Gly Phe Glu Leu Leu Val Leu Tyr Gly Gly Lys				
	165		170	175
Glu Lys Lys Val Asn Val Thr Pro Gly Lys His Thr Tyr				
	180		185	

<210> 8262  
 <211> 180  
 <212> PRT  
 <213> B.fragilis

<400> 8262	
Ser Thr Val Val Phe Phe Leu Leu Glu Lys Arg Leu Lys Val Pro Asp	
1	5 10 15
Phe Leu Trp Leu Leu Leu Asn Phe Asp Trp Arg Lys Ser Val Lys Met	
	20 25 30
Phe Leu Phe Tyr Ala Asp Leu Phe Asn Val Val Phe Val Leu Cys Ala	
	35 40 45
Phe Cys Cys Leu Tyr Cys Asn Met Tyr Phe Val Phe Val Ser Phe Cys	
	50 55 60
Ile Leu Leu Met Leu Ile Tyr Gly Leu Phe Ser Ser Phe Pro Val Ser	
65	70 75 80
Arg Ala Gly Lys Thr Asn Ser Ile Ala Gly Lys Ile Tyr Asn Leu Thr	
	85 90 95
Ile Val Arg Phe Leu Leu Arg Pro Phe Ile Glu Ser Ile Ser Gln Ser	
	100 105 110
Leu Leu Ile Lys Asp Ala Ala Gly Met Tyr Ser Tyr Ile Pro Lys Gln	
	115 120 125
Ala Gln Val Arg Ile Arg Phe Met Ser Phe Tyr Asn Val Tyr Thr Phe	
	130 135 140
Leu Ile Cys His Met Gly Arg Glu Met Ser Phe Ser Pro Cys Pro Gly	
145	150 155 160
Cys Ser Glu Thr Arg Leu Cys Asp Ile Thr Trp Phe Pro Cys Pro Leu	
	165 170 175
Gly Glu Ala Gly	
	180

<210> 8263  
 <211> 63  
 <212> PRT  
 <213> B.fragilis

<400> 8263	
Gln Ala Pro Val Gln Met Pro Val Val Ser Leu Gly Arg Met Met Gln	
1	5 10 15
Arg Lys Met Ala Lys Leu Ile Lys Leu Phe Phe Pro Trp His Tyr Val	
	20 25 30
Ile Asn Tyr Phe Thr Asn Lys Ala Glu Val Gly Ile Gly Ala Asn Ser	
	35 40 45
Phe Ala Glu Gly Ser Phe Gln Asn Gln Leu Lys Cys Ser Pro Ser	
	50 55 60

<210> 8264  
 <211> 551  
 <212> PRT  
 <213> B.fragilis

&lt;400&gt; 8264

Thr	Asn	Leu	Leu	Ile	Lys	Thr	Val	Met	Lys	Lys	Tyr	Ile	Pro	Leu	Leu
1				5					10					15	
Ala	Leu	Ser	Ala	Leu	Thr	Phe	Cys	Ser	Cys	Ser	Asp	Phe	Leu	Asn	Val
			20					25					30		
Gln	Pro	Glu	Gly	Asn	Pro	Ala	Thr	Thr	Ser	Tyr	Phe	Leu	Asn	Asp	Glu
		35					40					45			
Gln	Ala	Ile	Asp	Ala	Ile	Asp	Gly	Leu	Tyr	Ala	Pro	Ile	His	Gln	Glu
	50					55					60				
Lys	Gly	Phe	Gly	Arg	Glu	Leu	Phe	Trp	Glu	Gln	Gly	Ala	Ala	Cys	Asp
65				70						75					80
Ile	Val	Trp	Ala	Lys	Ser	Arg	Gly	Phe	Asn	Ser	Leu	Ala	Thr	Phe	Asn
				85					90					95	
Tyr	Asn	Gly	Asp	Glu	Ser	Pro	Ile	Ser	Gly	Gly	Phe	Asp	Leu	Phe	Tyr
			100					105					110		
Gln	Asn	Met	Ala	Arg	Ser	Asn	Trp	Ile	Ile	Lys	Gln	Leu	Leu	Ala	Lys
		115					120					125			
Glu	Lys	Lys	Gly	Gly	Leu	Ser	Asp	Val	Glu	His	Arg	Ser	Leu	Gly	Glu
	130					135					140				
Ala	Phe	Phe	Met	Arg	Gly	Met	Ala	His	Phe	Trp	Ile	Ala	Tyr	Arg	Tyr
145					150					155					160
Gly	Thr	Lys	Asp	Gln	Gly	Val	Pro	Phe	Val	Arg	Tyr	Glu	Asp	Phe	Glu
				165					170					175	
Gly	Asp	Tyr	Asp	Asn	Ser	Ile	Pro	Pro	Gln	Gln	Ala	Ser	Val	Ile	Asp
			180					185					190		
Asn	Tyr	Lys	Phe	Ile	Ile	Glu	Asp	Met	Asp	Asn	Ala	Ile	Ser	Tyr	Leu
		195					200					205			
Pro	Lys	Phe	Glu	Glu	Tyr	Ser	Asp	Asp	Asp	Lys	Gly	Arg	Ala	His	Lys
	210					215					220				
Ala	Ala	Ala	Val	Ala	Tyr	Lys	Ala	Lys	Val	Tyr	Ala	Tyr	Trp	Ala	Thr
225					230					235					240
Trp	Asp	Glu	Thr	Gln	Trp	Asn	Asn	Val	Ile	Ala	Met	Val	Asn	Ser	Leu
				245					250					255	
Glu	Thr	Asp	Tyr	Gly	Arg	Gly	Leu	Ala	Asp	Thr	Phe	Ala	Glu	Val	Phe
			260					265					270		
Ser	Ser	Glu	Phe	Thr	Asp	Phe	Trp	Asn	Lys	Glu	Tyr	Ile	Trp	Ser	Ile
		275					280					285			
Pro	Ser	Asn	Gly	Gly	Ser	Thr	Gly	Gly	Gly	Val	Glu	Phe	Pro	Gly	Val
		290				295					300				
Ile	Leu	Glu	Asp	Lys	Ala	Trp	Gly	Val	Tyr	Asn	Gly	Trp	Gly	His	Ile
305				310						315					320
Lys	Pro	Ser	Tyr	Asp	Ile	Tyr	Glu	Glu	Met	Ala	Lys	Asp	Gly	Ala	Gly
				325					330					335	
Asn	Asp	Arg	Leu	Val	Arg	Ser	Ile	Leu	Glu	Tyr	Asn	Gln	Glu	Phe	Glu
			340					345					350		
Phe	Phe	Gly	Glu	Lys	Arg	Lys	Phe	Tyr	Thr	Asp	Thr	Asn	Leu	Asp	Val
		355					360					365			
Gly	Phe	Gln	Ile	Asn	Lys	Tyr	Met	Asp	Pro	Phe	Lys	His	Lys	Asp	Ala
	370					375					380				
Asp	Thr	Lys	Gly	Tyr	Val	Asn	Thr	Asn	Gly	Asn	Trp	Pro	Thr	Ala	Arg
385					390					395					400
Val	Asn	Phe	Pro	Leu	Ile	Arg	Phe	Ala	Glu	Met	Leu	Leu	Phe	Arg	Ala
				405					410					415	
Glu	Ala	Tyr	Leu	Met	Thr	Asp	Gln	Pro	Gly	Lys	Ala	Lys	Glu	Asp	Leu
			420					425					430		
Asn	Arg	Ile	Arg	Arg	Arg	Ser	Asn	Leu	Lys	Glu	Leu	Ile	Asp	Met	Pro
		435					440					445			
Thr	Met	Ala	Asp	Leu	Tyr	His	Glu	Arg	Arg	Cys	Glu	Leu	Ala	Phe	Glu
	450					455					460				

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Tyr Thr Asp His Leu Phe Asp Leu Lys Arg Trp His Arg Ser Ser Asn  
 465 470 475 480  
 Val Val Ile Lys Glu Leu Ala Ala Lys Glu Leu Asn Ala His Pro Arg  
 485 490 495  
 Ile Arg Lys Tyr Ala Asp Arg Ser Asn Pro Glu Ser Thr Phe Thr Ile  
 500 505 510  
 Glu Pro Tyr Ala Asp Tyr Leu Asn Lys Thr Pro Tyr Gln Asp Tyr Met  
 515 520 525  
 Met Val Phe Pro Tyr Pro Ala Glu Gln Ile Thr Lys Ser Asn Gly Lys  
 530 535 540  
 Leu Ile Gln Asn Asp Gly Tyr  
 545 550

<210> 8265  
 <211> 261  
 <212> PRT  
 <213> B.fragilis

<400> 8265  
 Met Phe Ser Leu Cys Thr Arg Leu Pro Cys Ala Ser Arg Gln Thr Thr  
 1 5 10 15  
 Leu Gln Pro Val Arg Lys Pro Gly Ser Ile Pro Ile Thr Arg Phe Cys  
 20 25 30  
 Pro Lys Gly Gly Ala Arg Ser Ser Trp Arg Arg Phe Ser Val Lys Thr  
 35 40 45  
 Arg Ile Ala Ser Ser Ser Ala Cys Ser Phe Thr Glu Gly Gly Lys Phe  
 50 55 60  
 Gly Phe Asp Gly Arg Phe Gln Gln Thr Ala Val Gly Ile Arg Ala Asp  
 65 70 75 80  
 Asp Ser Leu Ala Gly Lys Glu Ile Thr His Cys Ile Thr Gly Thr Phe  
 85 90 95  
 Val Phe Ala His Leu Gly Val His Leu His Trp Ser Asp Leu Leu Leu  
 100 105 110  
 Ser Gly Leu Phe Phe Ala Met Val Ala Ile Val Glu Glu Thr Met Met  
 115 120 125  
 Arg Gly Tyr Val Leu Gly Arg Leu Leu Arg Thr Arg Leu Asn Lys Phe  
 130 135 140  
 Ile Ser Leu Leu Ile Ser Ser Leu Leu Phe Ala Leu Leu His Leu Met  
 145 150 155 160  
 Asn Pro Asn Val Ala Phe Leu Pro Met Leu Asn Leu Val Leu Gly Gly  
 165 170 175  
 Leu Leu Leu Gly Ala Ser Tyr Leu Tyr Thr Arg Asn Leu Trp Phe Pro  
 180 185 190  
 Val Ser Leu His Phe Phe Trp Asn Trp Ile Gln Gly Pro Val Leu Gly  
 195 200 205  
 Tyr Glu Val Ser Gly Asn Arg Phe Cys Glu Thr Leu Phe Ser Leu Arg  
 210 215 220  
 Leu Pro Ala Asn Asn Leu Ile Asn Gly Gly Ala Phe Gly Phe Glu Gly  
 225 230 235 240  
 Ser Leu Val Cys Thr Val Leu Ala Thr Leu Phe Thr Leu Phe Ile Ile  
 245 250 255  
 Trp Trp Phe Glu Gln  
 260

<210> 8266  
 <211> 532  
 <212> PRT  
 <213> B.fragilis

&lt;400&gt; 8266

Lys Ile Thr Leu Lys Ile Glu Arg Lys Glu Cys Phe Arg Leu Arg Ser  
 1 5 10 15  
 Leu Ser Ser Lys Arg Phe Ser Ile Thr Cys His Lys Phe Ile Thr Lys  
 20 25 30  
 Gln Asn Ser Arg Ser Met Asn Ile Lys Glu Ile Leu Asn Gln Ser Glu  
 35 40 45  
 Gly Arg Arg Leu Glu Phe Lys Ala Glu Leu Pro Glu His Ser Asp Leu  
 50 55 60  
 Ala Lys Thr Val Val Ala Phe Ala Asn Asp Ala Gly Gly Asp Leu Tyr  
 65 70 75 80  
 Ile Gly Val Ala Asp Asp Pro Arg Glu Val Val Gly Leu Asp Glu Asp  
 85 90 95  
 Lys Leu Val Thr Ile Glu Glu Lys Ile Ser Asn Ile Ile Phe Asp Arg  
 100 105 110  
 Cys Tyr Pro Ala Ile Leu Pro Glu Ile Lys Phe Ile Ser Glu Glu Asn  
 115 120 125  
 Lys His Leu Ile Gln Val Thr Val Phe Arg Gly Ser Thr Pro Pro Tyr  
 130 135 140  
 Tyr Leu Lys Glu Lys Gly Lys Leu Gln Gly Thr Phe Ile Arg Val Gly  
 145 150 155 160  
 Ser Ala Asn Arg Leu Ala Asp Glu Ala Ile Ile Ser Glu Leu Glu Arg  
 165 170 175  
 Arg Arg Arg Asn Ile Ser Phe Asp Ser Glu Val Ile Pro Asp Lys Pro  
 180 185 190  
 Val Asn Asp Leu Asn Ile Asp Gly Phe Lys Ala Ile Phe Lys Glu Lys  
 195 200 205  
 Thr Gly Glu Glu Leu Ser Asp Gln Ala Leu Arg Lys Leu Asp Leu Val  
 210 215 220  
 Lys Asp Met Gln Gly Ala Glu Tyr Pro Thr Asn Ala Leu Ile Leu Phe  
 225 230 235 240  
 Ser Asp Asp Pro Leu Arg Asn Ser Leu Phe His Tyr Ala Lys Val Glu  
 245 250 255  
 Cys Ala Arg Phe Lys Gly Val Ser Ile Asp Asp Phe Ile Asp Gln Lys  
 260 265 270  
 Ser Ile Thr Thr Asn Ile Ala Thr Gln Ala Glu Glu Ala Tyr Asn Phe  
 275 280 285  
 Val Leu Arg His Ile Asn Lys Gly Ala Ser Val Glu Gly Val Tyr Thr  
 290 295 300  
 Val Ser Arg Trp Glu Tyr Pro Val Lys Ala Ile Arg Glu Ala Ile Arg  
 305 310 315 320  
 Asn Ala Val Val His Arg Asp Tyr Ser Leu Thr Gly Lys Asp Val Lys  
 325 330 335  
 Ile Ala Ile Tyr Asp Asp Met Val Glu Ile Thr Ser Pro Gly Leu Leu  
 340 345 350  
 Pro Pro Ser Ile Asp Tyr Ala Ala Met Glu Ser Arg Gln Ser Asp Ala  
 355 360 365  
 Arg Asn Lys Val Ile Ala Pro Val Phe Lys Arg Leu Gly Ile Ile Asp  
 370 375 380  
 Gln Trp Gly Asn Gly Leu Lys Leu Ile Ala Asp Glu Met Lys Glu Tyr  
 385 390 395 400  
 Pro Asn Ile Glu Leu Arg Trp Arg Glu Val Gly Leu Ser Phe Gln Val  
 405 410 415  
 Gln Phe Val Arg Leu Asp Tyr Val Leu Asn Ala Glu Arg Ile Lys Asp  
 420 425 430  
 Ile Gln Gln Glu Leu Gln Gln Glu Leu Gln Gln Glu Leu Gln Gln Glu  
 435 440 445  
 Leu Gln Gln Glu Leu Arg Lys Ala Thr Leu Tyr Ser Glu Val Leu Arg  
 450 455 460

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Cys Ile Val Ser Asn Ala Leu Ser Arg Gln Asp Ile Ser Leu Ala Leu  
 465 470 475 480  
 Gly Gln Lys Lys Val Ser Gly Gln Leu Asn Lys Val Ile Gln Lys Leu  
 485 490 495  
 Ile Ala Asn Asn Leu Ile Glu Arg Thr Ile Pro Glu Lys Pro Asn His  
 500 505 510  
 Pro Ala Gln Lys Phe Arg Leu Thr Glu Arg Gly Gln Leu Phe Leu Gly  
 515 520 525  
 Leu Leu Ala Lys  
 530

<210> 8267  
 <211> 74  
 <212> PRT  
 <213> B.fragilis

<400> 8267  
 Val Ala Ser Ser Arg Lys Gly Asn Lys Asn Leu Lys His Trp Arg Tyr  
 1 5 10 15  
 Trp Ile Phe Gln Ala Leu Leu Tyr Thr Cys Thr Glu Lys Leu Lys Val  
 20 25 30  
 Leu Val Asn Gly Val Leu Leu Arg Cys Asp Ala Asp Tyr Leu Phe Ile  
 35 40 45  
 Arg Asn Thr Gly Glu Gly Tyr Ile Trp Asp Glu Thr Pro Ile Phe Ile  
 50 55 60  
 Arg Ile Met Pro Gln Ser Trp Gln Gln Lys  
 65 70

<210> 8268  
 <211> 68  
 <212> PRT  
 <213> B.fragilis

<400> 8268  
 Glu Ser Arg Phe Val Asn Glu Leu Gly Asn Gly Thr Ser Arg Leu Thr  
 1 5 10 15  
 Ile Pro Val Asn Asp Leu Met Asn Tyr Val Glu Tyr Phe His Ile  
 20 25 30  
 Ser Lys Gln Asn Gly Leu Val Glu Tyr Cys Asn Lys Ala Ile Val Thr  
 35 40 45  
 Leu Gln Gln Lys Leu Asp Lys Glu Lys Asp Asn Phe Asn Lys Arg Ile  
 50 55 60  
 Asn Ser Leu Leu  
 65

<210> 8269  
 <211> 77  
 <212> PRT  
 <213> B.fragilis

<400> 8269  
 Tyr Gly Lys Pro Ala Arg Gly Arg Ser Gly Gln Gln Arg His Gln Arg  
 1 5 10 15  
 His Gln Val Gly Lys Gln Glu Tyr Pro Glu Gly Lys Gly Asp Asn  
 20 25 30  
 Gln Asp Gln Leu Pro His Thr Ala Gln Thr Val Glu Arg Val Arg Lys  
 35 40 45  
 Glu Arg Ala Cys Arg Gly Cys Pro Met Thr Ala Asp Ala Ala Arg Leu  
 50 55 60

Leu Lys Glu Phe Asp Gln Ile Lys Asn Leu Lys Thr Met  
 65 70 75

<210> 8270

<211> 536

<212> PRT

<213> B.fragilis

<400> 8270

Asn	Leu	Lys	Thr	His	Lys	Glu	Val	Thr	Ser	Asn	Lys	Ser	Lys	Thr	Leu
1				5					10					15	
Asp	Phe	Val	Ile	Ser	Lys	Thr	Met	Lys	Ile	Phe	Arg	Tyr	Ile	Leu	Leu
		20						25					30		
Ala	Ser	Leu	Thr	Cys	Thr	Leu	Phe	Ser	Cys	Gly	Pro	Asp	Glu	Leu	Ile
		35					40					45			
Pro	Glu	Ser	Val	Pro	Pro	Val	Val	Asn	Pro	Gly	Asp	Lys	Asp	Glu	Pro
	50					55					60				
Gly	Glu	Glu	Pro	Glu	Glu	Pro	Glu	Glu	Pro	Ala	Lys	Ile	Gln	Leu	Gly
65					70					75				80	
Ile	Thr	Ala	Ser	Leu	Gln	Asn	Met	Gln	Gln	Thr	Arg	Gly	Ile	Ile	Glu
			85					90						95	
Ala	Phe	Ala	Pro	Gly	His	Glu	Met	Gly	Val	Phe	Val	Gly	Thr	Ser	Gln
			100					105						110	
Thr	Asp	Glu	Ala	Ala	Gly	Ile	Lys	Asn	Ala	Ser	Tyr	Leu	Phe	Asp	Gly
		115					120						125		
Lys	Val	Trp	Asn	Ala	Gly	Gln	Asp	Val	Pro	Val	Glu	Ala	Asp	Ala	Asp
		130				135						140			
Val	Val	Ala	Tyr	Leu	Pro	Tyr	Asn	Arg	Glu	Val	Thr	Asp	Phe	Lys	Ser
145					150					155					160
Val	Pro	Phe	Asp	Leu	Ala	Asp	Gln	Asn	Asp	Ile	Leu	Tyr	Gly	Ala	Ala
				165					170					175	
Lys	Val	Thr	Lys	Asp	Val	Pro	Thr	Ala	Ser	Leu	Met	Met	Gln	His	Ala
			180					185						190	
Met	Thr	Leu	Val	Arg	Met	Arg	Leu	Met	Lys	Asn	Glu	Tyr	Met	Gly	Thr
		195					200						205		
Gly	Leu	Val	Ser	Asp	Met	Thr	Phe	Ala	Gly	Val	Leu	Thr	Ser	Gly	Thr
		210				215						220			
Val	Asp	Ala	Leu	Thr	Gly	Ala	Val	Thr	Lys	Asp	Tyr	Asn	His	Gly	Arg
225					230					235					240
Gly	Ser	Val	Lys	Val	Gly	Gly	Asn	Tyr	Met	Leu	Asn	Asp	Glu	Asn	Pro
			245						250					255	
Val	Ile	Val	Asp	Ala	Ile	Met	Ile	Pro	Arg	Ala	Ala	Tyr	Asp	Glu	Gln
			260					265						270	
Ala	Ser	Val	Ser	Phe	Val	Ile	Asp	Gly	Gln	Lys	His	Thr	Tyr	Ala	Phe
			275				280						285		
Pro	Val	Gln	His	Glu	Trp	Lys	Ala	Gly	Met	Lys	Tyr	Thr	Tyr	Thr	Leu
			290			295						300			
Lys	Met	Thr	Gly	Asn	Tyr	Asn	Ala	Pro	Val	Asn	Lys	Glu	Gln	Val	Asp
305					310					315					320
Ile	Asp	Val	Glu	Tyr	Trp	Gly	Gln	Tyr	Gly	Lys	Thr	Asp	Asp	Ile	Val
			325						330					335	
Leu	Asn	Pro	Asn	Pro	Glu	Asp	Tyr	Glu	Phe	Thr	Ile	Trp	Pro	Asn	Tyr
			340					345					350		
Thr	Ala	Tyr	Gly	Tyr	Asp	Cys	Tyr	Gln	Asn	Glu	Gly	Lys	Val	Phe	Gly
		355				360						365			
Thr	Phe	Tyr	Tyr	Pro	Trp	Cys	Gly	Thr	Ser	Glu	Gly	Glu	Leu	Arg	Phe
		370				375					380				
Val	Phe	Met	Lys	Gln	Gly	Met	Asn	Glu	Ile	Val	Glu	Lys	Phe	Gln	Pro
385					390					395					400

Ile Asp Ile Lys Thr Asn Gly Gly Trp Asp Gly Lys Arg Ile Gln Cys  
 405 410 415  
 Tyr Ile Thr Ser Val Pro Gly Thr Tyr Gln Leu Val Pro Leu Phe Arg  
 420 425 430  
 Arg Lys Gly Glu Thr Met Trp Cys Arg Ala Ala Asp Tyr Asp His Gly  
 435 440 445  
 Ser Thr Asp Trp Glu Trp Leu Tyr Glu Val Lys Ala Pro Ala Pro Asp  
 450 455 460  
 Asp Leu Pro Ala Leu Arg Met Met Glu Val Glu Gly Gln Gly Tyr Thr  
 465 470 475 480  
 Ser Ile Leu Val Tyr Pro Val Pro Asp Glu Thr Ser Trp Asn Leu Val  
 485 490 495  
 Tyr Thr Leu Ser Asn Lys Gly Glu Lys Ala Leu Arg Gly Glu Ile Lys  
 500 505 510  
 Ala Val Trp Glu Arg Glu Phe Lys Leu Lys Ser Asn Ser Tyr Arg Pro  
 515 520 525  
 Ser Asp Lys Lys Lys Gly Ala Ile  
 530 535

<210> 8271  
 <211> 62  
 <212> PRT  
 <213> B.fragilis

<400> 8271  
 Glu Gly Glu Thr Ile Asp Val Phe Met Tyr Val Ser Asp Tyr Leu Ser  
 1 5 10 15  
 Leu Cys Ile Phe Pro Cys Val Phe Phe Ala Leu Lys Ile Tyr Asp Lys  
 20 25 30  
 Leu Ser Lys Lys Gln Lys Asn Gly Lys Gln Tyr Ser Asp Arg Glu Gln  
 35 40 45  
 Gly Lys Ile Ile Thr Gly Ser Ser Asn Pro Leu Phe Pro Lys  
 50 55 60

<210> 8272  
 <211> 66  
 <212> PRT  
 <213> B.fragilis

<400> 8272  
 Met Glu Thr Ala Phe Ala Gly Tyr Gly Met Asn Pro Asp Ala Lys Ala  
 1 5 10 15  
 Ala Ala Leu Pro Glu Pro Val Phe Gln Gly Thr Gly Glu Arg Asn Pro  
 20 25 30  
 Val Gly Tyr Ser Val Pro Gly Glu Tyr Ile Pro Val Ala Phe Gln Cys  
 35 40 45  
 Leu Gln Thr Phe Ala Ser Leu Gln Cys Leu Val Glu Gln Phe Leu Ser  
 50 55 60  
 Val Val  
 65

<210> 8273  
 <211> 107  
 <212> PRT  
 <213> B.fragilis

<400> 8273  
 Pro Ala Asn Ala Val Ser Ile Gln Val Leu Thr Trp Ala Trp Ser Trp  
 1 5 10 15

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Gln Pro Pro Val Tyr Ala Thr Ala Arg Gly Thr Val Ser Phe Ala Arg  
 20 25 30  
 Arg Lys Gly Gly Tyr Glu Arg Cys Val Ile Ile Arg His Ser Tyr Gly  
 35 40 45  
 Phe Glu Thr Leu Tyr Ala His Leu Ala Ala Tyr Tyr Thr Thr Glu Gly  
 50 55 60  
 Gln Lys Val Asp Arg Gly Ala Val Ile Ala Phe Ala Gly Ser Thr Gly  
 65 70 75 80  
 Lys Ser Thr Gly Tyr His Leu His Tyr Glu Ile Arg Lys Asn Gly Lys  
 85 90 95  
 Pro Ile Lys Pro Tyr Trp Tyr Gly Tyr Asp Asp  
 100 105

<210> 8274  
 <211> 138  
 <212> PRT  
 <213> B.fragilis

<400> 8274  
 Ser Gly Arg Ala Val Arg Glu Lys Ser Pro Arg Pro Val Lys Lys Gln  
 1 5 10 15  
 Arg Gln Ser Leu Ile Asn Ile Gln Met Arg Ile Thr Ala Arg Pro Gly  
 20 25 30  
 Ala Lys Thr Leu Val Ala Glu Cys Ala Phe Tyr Leu Tyr Met Asn Asp  
 35 40 45  
 Trp Leu Cys Lys Asp Lys Lys Ile Phe Ala Met Thr Leu Phe Glu Ile  
 50 55 60  
 Leu Asn Phe Asn Arg Glu Val Leu Glu Arg Leu Ala Gly Met Gly Phe  
 65 70 75 80  
 Lys Pro Asp Asp Tyr Lys Tyr Ile Asp Leu Tyr Lys Glu Tyr Glu Arg  
 85 90 95  
 Met Arg Cys Gln Gly Asp Lys Val Thr Tyr Cys Val Ala Val Leu Ser  
 100 105 110  
 Asn Arg His Gly Val Ser Glu Arg Lys Ile Tyr Glu Ile Leu Gly Arg  
 115 120 125  
 Phe Lys Lys Glu Cys Thr Phe His Ala Val  
 130 135

<210> 8275  
 <211> 108  
 <212> PRT  
 <213> B.fragilis

<400> 8275  
 Lys Gly Gly Gln Ser Gly Ala Asp Glu Met Pro Val Pro Gly Gly Glu  
 1 5 10 15  
 Val Phe Tyr Arg Val Ser Glu Ala Val Gly Thr Gly Gly Ile Met  
 20 25 30  
 Thr Thr Leu Ser Val Ile Ser Tyr Ile Glu Arg Ile Asn Arg Val Tyr  
 35 40 45  
 Arg Leu Ile Arg Met Glu Arg Thr Gly Ser Leu Asp Glu Leu Ala Ser  
 50 55 60  
 Leu Leu Arg Val Ser Arg Thr Ile Asn Asn Tyr Leu Glu Glu Leu  
 65 70 75 80  
 Arg Leu Met Gly Ala Glu Ile Lys Phe Ser Arg Arg Gln Asn Pro Ile  
 85 90 95  
 Leu Phe Gln Glu Gln Ile Arg Ile Ala Arg Asp Gly  
 100 105

<210> 8276  
 <211> 412  
 <212> PRT  
 <213> B.fragilis

<400> 8276

Thr	Thr	Thr	Lys	Asn	Lys	Lys	Tyr	Thr	Met	Glu	Thr	Ile	Gln	Glu	Ile
1				5					10					15	
Ile	Asp	Thr	Ile	Lys	Gln	Trp	Pro	Ala	Thr	Ile	Trp	Trp	Val	Met	Gly
			20					25					30		
Ala	Leu	Phe	Ile	Ile	Ser	Trp	Phe	Trp	Asp	Thr	Pro	Pro	Arg	Lys	Lys
		35					40					45			
Arg	Asn	Lys	Asp	Lys	Met	Thr	Asp	Asp	Lys	Asn	Asn	Asp	Leu	Lys	Ser
	50					55					60				
Ser	Asn	Met	Thr	Asp	Lys	Lys	Glu	Phe	Lys	Gly	Asn	Leu	Met	Lys	Glu
65					70					75					80
Gly	Ile	Phe	Val	Trp	Val	Val	Phe	Ala	Pro	Asp	Gly	Lys	Ala	Gly	Leu
			85					90						95	
Tyr	Met	Asp	Gly	Glu	Lys	His	Leu	Glu	Asn	Gly	Thr	Tyr	Ala	Tyr	Gly
			100					105					110		
Asn	Arg	Leu	Ser	Thr	Asp	Val	Ser	Ser	Phe	His	Glu	Ile	Cys	Asn	Leu
		115					120					125			
Asp	Asn	Lys	Pro	Val	Tyr	Leu	His	Phe	Pro	Glu	His	Gly	Ile	Ser	Val
	130					135					140				
Arg	Tyr	Arg	Ile	Arg	Leu	Arg	Tyr	Ser	Arg	Thr	Asp	Asp	Ala	Gly	Ile
145					150					155					160
Glu	Arg	Ser	Glu	His	Glu	Pro	Glu	Thr	Cys	Leu	Pro	Ala	Trp	Ile	Val
				165					170					175	
Arg	Gly	Lys	Thr	Gly	Gln	Thr	Gly	Leu	Tyr	Leu	Gln	Lys	Trp	His	Glu
			180					185					190		
Glu	Lys	Cys	Phe	Ile	Pro	Asp	Met	Ser	Gly	Leu	Pro	Gly	Leu	Pro	Asp
		195					200					205			
Leu	Gln	Pro	Asp	Gly	Ile	Pro	Val	Arg	Ile	Glu	Met	Leu	Ile	Arg	Lys
	210					215					220				
Ala	Tyr	Pro	Phe	Phe	Asp	Leu	Val	Lys	Pro	Ala	Ser	Trp	Arg	Ser	Trp
225					230					235					240
Gly	Ile	Ser	Ser	Asn	Pro	Ala	Ser	Leu	Lys	Gly	Asn	Phe	Phe	Val	Asn
				245					250					255	
Pro	Gly	Glu	Gly	Asn	Leu	Thr	Gly	Glu	Gly	Val	Val	Met	Trp	Thr	Val
			260					265					270		
Phe	Thr	Gly	Asp	Gly	Lys	Ala	Ala	Leu	Tyr	Met	Asp	Asp	Arg	Trp	His
		275					280					285			
Leu	Glu	Asn	Gly	Ile	Leu	Ala	Tyr	Gly	Glu	Arg	Leu	Ser	His	Asp	Val
	290					295					300				
Pro	Val	Leu	His	Lys	Ile	Phe	Asn	Leu	Glu	Glu	Met	Leu	Leu	Phe	Arg
305					310					315					320
His	Phe	Pro	Lys	Arg	Gly	Val	Pro	Gln	Arg	Ile	Arg	Met	Gln	Leu	Arg
				325					330					335	
Phe	Pro	Gly	Thr	Gly	Glu	Ala	Cys	Lys	Glu	Arg	Pro	Asp	Cys	Asn	Arg
		340						345					350		
Gly	Thr	Tyr	Phe	Leu	Pro	Ala	Trp	Val	Val	Pro	Glu	Glu	Ser	Gly	Arg
		355					360					365			
Ile	Ser	Leu	Tyr	Leu	Gln	Glu	Gln	Leu	Ser	Gly	Glu	Cys	Asp	Ile	Gln
	370					375					380				
Asp	Ile	Ser	Arg	Leu	Pro	Gly	Ala	Pro	Lys	Leu	Gln	Pro	Asn	Gly	Val
385					390					395					400
Pro	Val	Arg	Val	Glu	Ile	Leu	Leu	Gln	Gln	Glu	Gly				
				405					410						

4475  
 8276  
 412  
 PRT  
 B.fragilis

<210> 8277  
 <211> 62  
 <212> PRT  
 <213> B.fragilis

<400> 8277  
 Arg Ile Leu Lys Leu Cys Asp Met Ile Gln Glu Ile Ile Asp Met Ile  
 1 5 10 15  
 Lys Glu Leu Ser Gly Ser Asp Ile Leu Cys Leu Ser Phe Tyr Cys Gly  
 20 25 30  
 Phe Ile Leu Ile Leu Ser His Arg Ser Asn Glu Lys Ala Ser Val Tyr  
 35 40 45  
 Gly Glu Glu Lys Val Pro Asp Asn Ser Pro Glu Pro Glu Lys  
 50 55 60

<210> 8278  
 <211> 135  
 <212> PRT  
 <213> B.fragilis

<400> 8278  
 Ser Arg Gln Asn Ile Lys Glu Asp Ser Pro Met Lys Leu Leu Leu Ala  
 1 5 10 15  
 Leu Leu Leu Ser Cys Leu Pro Phe Asn Gly Ser Asn Asp Gly Lys Glu  
 20 25 30  
 Leu Leu Asp Lys Ala Leu Glu Arg Cys Glu Arg Leu Glu Thr Leu Glu  
 35 40 45  
 Ser Tyr Arg Asp Ile Leu Ser Arg Tyr Gly Val Ser Asp Arg Ile Pro  
 50 55 60  
 Leu Thr Cys Pro Leu Lys Asp Arg Phe Arg Lys Ser Ser Gly Phe Gly  
 65 70 75 80  
 Ile Arg Ile His Pro Ile Thr Gly Lys Arg Ser Phe His Ser Gly Ile  
 85 90 95  
 Asp Met Gly Val Glu Leu Ala Ala Pro Gly Leu Arg His Arg Ser Gly  
 100 105 110  
 Asn Gly Phe Phe Arg Glu Lys Glu Arg Gly Val Arg Lys Met Cys His  
 115 120 125  
 Tyr Thr Pro Phe Leu Trp Leu  
 130 135

<210> 8279  
 <211> 69  
 <212> PRT  
 <213> B.fragilis

<400> 8279  
 Lys Arg Cys Asp Met Glu Thr Ile Trp Glu Lys Val Asp Tyr Leu Gly  
 1 5 10 15  
 Arg Ile Leu Cys Cys Ile Ile Met Gly Ile Ala Tyr Ile Leu Ile Met  
 20 25 30  
 Ile Ala Pro Leu Tyr Ala Ser Arg His Glu Gln Ser Gly Gln Arg Ser  
 35 40 45  
 Asp Glu Lys Ala Phe Val Asp Glu Glu Glu Lys Val Pro Asp Asn Gly  
 50 55 60  
 Pro Glu Pro Glu Lys  
 65

<210> 8280  
 <211> 297



&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8280

Glu	Phe	Cys	Cys	Pro	Glu	Ile	Gln	Thr	His	Ile	Leu	His	Asp	Lys	Met
1				5					10					15	
Ile	Met	Lys	Lys	Glu	Lys	Thr	Tyr	Ser	Arg	Ala	Pro	Leu	Pro	Phe	Val
			20					25					30		
Gly	Gln	Lys	Arg	Met	Phe	Val	Ser	Glu	Phe	Lys	Lys	Ile	Leu	Lys	His
		35					40					45			
Phe	Asp	Asp	Lys	Thr	Ile	Phe	Val	Asp	Leu	Phe	Gly	Gly	Ser	Gly	Leu
	50					55					60				
Leu	Ser	His	Ile	Thr	Lys	Arg	Glu	Arg	Pro	Asp	Ala	Val	Val	Ile	Tyr
65					70					75				80	
Asn	Asp	His	Asp	Asn	Tyr	Arg	Gly	Arg	Leu	Glu	Asn	Ile	Gly	Arg	Thr
				85					90					95	
Asn	Thr	Leu	Leu	Gly	Asp	Leu	Arg	Lys	Ile	Val	Gly	Ile	Tyr	Pro	His
			100					105					110		
Asn	Gln	Lys	Ile	Thr	Gly	Lys	Met	Arg	Glu	Ala	Phe	Leu	Glu	Arg	Ile
		115					120					125			
Arg	Leu	Glu	Glu	Thr	Thr	Gly	Phe	Val	Asp	Tyr	Leu	Thr	Leu	Ser	Thr
	130					135					140				
Ser	Leu	Leu	Phe	Ser	Gly	Lys	Tyr	Ala	Gln	Asn	Met	Glu	Glu	Leu	Glu
145					150					155				160	
His	Leu	Cys	Phe	Tyr	Asn	Lys	Ile	Arg	Gln	Ala	Asp	Tyr	Arg	Cys	Asp
				165					170					175	
Gly	Tyr	Leu	Asp	Gly	Leu	Glu	Val	Val	Cys	Tyr	Asp	Tyr	Lys	Glu	Leu
			180					185					190		
Ala	Glu	Thr	Tyr	Arg	Val	Leu	Pro	Gly	Val	Val	Phe	Leu	Val	Asp	Pro
		195					200					205			
Pro	Tyr	Met	Gly	Thr	Asp	Ile	Ser	Thr	Tyr	Arg	Met	Asp	Trp	Lys	Leu
	210					215					220				
Gly	Asp	Tyr	Leu	Asp	Val	Leu	Pro	Val	Leu	Lys	Gly	His	Pro	Phe	Val
225					230					235				240	
Tyr	Phe	Thr	Ser	Ser	Lys	Ser	Pro	Ile	Leu	Asp	Phe	Cys	Lys	Trp	Met
				245					250					255	
Glu	Glu	His	Pro	Gly	Thr	Gly	Asn	Pro	Phe	Lys	Gly	Thr	Gly	Arg	Ser
			260					265					270		
Ala	Ile	Thr	Ala	Arg	Met	Asn	Tyr	Asn	Ser	Ser	Tyr	Thr	Asp	Ile	Met
		275					280						285		
Leu	Tyr	Asn	Asn	Met	Ala	Cys	Thr	Ala							
	290					295									

&lt;210&gt; 8281

&lt;211&gt; 271

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8281

Ser	Arg	Arg	Cys	Lys	Arg	Met	Lys	Thr	Ile	Thr	Thr	Ala	Cys	Val	Asn
1				5					10					15	
His	Lys	Gly	Gly	Val	Ala	Lys	Thr	Thr	Ser	Leu	Leu	Asn	Leu	Ala	Ala
			20					25					30		
Gly	Ile	Ala	Arg	Met	His	Lys	Lys	Arg	Val	Cys	Ile	Ile	Asp	Ala	Asp
		35					40					45			
Pro	Gln	Ala	Asn	Thr	Thr	Met	Ala	Ala	Phe	Gly	Glu	Glu	Met	Ala	Ser
	50					55					60				
Leu	Pro	Arg	Glu	Val	Leu	Leu	Glu	Ser	Ala	Leu	Gln	Asp	Cys	Met	Gln
65					70					75				80	

Asp	Thr	Pro	Pro	Lys	Leu	Lys	Pro	Gln	Lys	Trp	Leu	Glu	Lys	Val	Asp
				85					90					95	
Ile	Leu	Pro	Ala	Ser	Leu	Asp	Leu	Ala	Ala	Thr	Glu	Val	Ile	Met	Tyr
			100					105					110		
Thr	Thr	Pro	Gly	Arg	Glu	Phe	Leu	Phe	Arg	Glu	Ile	Val	Lys	Gly	Leu
		115					120					125			
Glu	Glu	Lys	Tyr	Asp	His	Ile	Leu	Ile	Asp	Cys	Pro	Pro	Ser	Leu	Gly
	130					135					140				
Ile	Ile	Thr	Gln	Asn	Ala	Leu	Met	Ala	Ser	Asp	Tyr	Val	Ile	Ile	Pro
145				150						155					160
Thr	Asp	Gly	Asn	Tyr	Phe	Ala	Met	Lys	Gly	Ile	Glu	Lys	Ile	His	Tyr
			165						170					175	
Ile	Ile	Gly	Leu	Leu	Lys	Arg	Lys	Leu	Gly	Ala	Glu	Val	Arg	Ile	Leu
		180						185					190		
Gly	Tyr	Phe	Met	Thr	Lys	Tyr	Asn	Ala	Arg	Arg	Lys	Leu	Asp	Val	Asp
	195						200					205			
Ile	Arg	Glu	Ser	Leu	Val	Arg	Ser	Leu	Gly	Asp	Gly	Val	Phe	Glu	Thr
210						215				220					
Val	Ile	Arg	Ser	Asn	Val	Ala	Leu	Gly	Glu	Ala	Gln	Tyr	Lys	Ala	Gln
225				230						235					240
Ser	Ile	Phe	Asp	Tyr	Ala	Pro	Ser	Ser	Asn	Gly	Ala	Asp	Asp	Tyr	Arg
			245						250					255	
Glu	Leu	Val	Lys	Glu	Phe	Leu	Gly	Arg	Ile	Lys	Lys	Ile	Asn	Lys	
		260						265					270		

&lt;210&gt; 8282

&lt;211&gt; 332

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8282

Pro	Ala	Ile	Arg	Ala	Leu	Met	Thr	Arg	Glu	Gly	Lys	Ser	Arg	Thr	Ala
1				5					10					15	
Ile	Leu	Ala	Gly	Leu	Ala	Ile	Val	Val	Val	Leu	Leu	Val	Trp	Val	Ile
		20						25					30		
Ile	Ala	Ser	Leu	Pro	Asp	Ser	Gly	Ser	Lys	Glu	Pro	Glu	Thr	Gly	Glu
	35					40						45			
Val	Ile	Leu	Arg	Thr	Arg	Ile	Lys	Glu	Ser	Phe	Thr	Leu	Asp	Asp	Met
50					55					60					
Leu	Gln	Lys	Val	Gly	Lys	Glu	Asn	Thr	Ser	Lys	Ser	Ala	Ser	Leu	Ser
65				70						75					80
Gly	Phe	Asp	Pro	Val	Thr	Glu	Glu	Pro	Ala	Asp	Thr	Ala	Gly	Asn	Glu
			85						90					95	
Arg	Glu	Ile	Arg	Arg	Ile	Gln	Glu	Leu	Ile	Arg	Asp	Asn	Glu	Arg	Glu
		100					105						110		
Leu	Gly	Ala	Gly	Ile	Thr	Val	Pro	Val	Gln	Gln	Pro	Val	Ala	Ser	Gly
	115						120					125			
Gly	Lys	Glu	Lys	Pro	Ala	Leu	Gln	Glu	Lys	Lys	Glu	Glu	Glu	Val	Arg
	130					135					140				
Pro	Gly	Gln	Arg	Lys	Ala	Val	Asp	Ser	Val	Pro	Arg	Ala	Pro	Ala	Arg
145				150						155					160
Arg	Gly	Phe	Asn	Thr	Val	Arg	Leu	Val	Arg	Gln	Glu	Glu	Arg	Asn	Ala
			165						170					175	
Ile	Lys	Ala	Phe	Val	His	Ser	Thr	Gln	Thr	Val	Met	Val	Gly	Ser	Thr
		180					185						190		
Leu	Lys	Met	Gln	Leu	Ala	Glu	Asn	Cys	Leu	Thr	Asp	Asp	Gly	Gln	Arg
	195						200					205			
Ile	Arg	Lys	Gly	Thr	Pro	Val	Phe	Gly	Glu	Val	Thr	Gly	Ile	Asn	Gly
210						215					220				

Glu Arg Val Leu Val Lys Ile Thr Ser Val Asn Leu Gly Gly Asn Ile  
 225 230 235 240  
 Leu Pro Phe Asp Lys Gln Val Tyr Ser Glu Asp Ala Ile Gln Gly Ile  
 245 250 255  
 Tyr Val Pro Gly Asn Val Lys Ala Glu Thr Ala Gln Glu Ala Gly Ala  
 260 265 270  
 Ala Gly Ile Ser Gly Ala Asn Thr Asn Ile Ser Gly Gly Phe Asp Met  
 275 280 285  
 Gly Ser Gln Leu Val Ala Gly Ala Ala Asn Ser Val Ile Asn Ala Thr  
 290 295 300  
 Lys Ser Ala Ala Ser Lys Asn Ile Arg Lys Val Lys Val Thr Ile Lys  
 305 310 315 320  
 Thr Asn Tyr Arg Ile Leu Leu Arg Gln Ser Lys Glu  
 325 330

<210> 8283  
 <211> 97  
 <212> PRT  
 <213> B.fragilis

<400> 8283  
 Lys Lys Gly Arg Ile Met Lys Asp Phe Thr Ser Lys Gly Ile Ser Leu  
 1 5 10 15  
 Glu Asn Met Val Gly Glu Thr Pro Gly Lys Glu Lys Gly Met Thr Gly  
 20 25 30  
 Lys Thr Ser Pro Lys Thr Asn Gln Thr Val Ala Leu Thr Glu Asp Leu  
 35 40 45  
 Lys Trp Glu Leu Arg Thr Phe Ala Ser Asp His Arg Cys Arg Gly Val  
 50 55 60  
 Lys Thr Leu Leu Glu Thr Met Ile Glu Cys Phe Val Arg Glu Asp Gly  
 65 70 75 80  
 Thr Leu Asp Arg Asp Lys Leu Glu Gly Phe Trp Arg Glu Tyr Val Glu  
 85 90 95  
 Lys

<210> 8284  
 <211> 207  
 <212> PRT  
 <213> B.fragilis

<400> 8284  
 Asn Met Lys Arg Ile Leu Thr Leu Ile Leu Ser Phe Cys Cys Leu Leu  
 1 5 10 15  
 Ser Phe Val Ser Cys Glu Lys Lys Glu Ile Ala Asp Thr Phe Glu Ala  
 20 25 30  
 Asn Ile Arg Lys Leu His Gly Asp Tyr Arg Leu Thr Asp Ile His Trp  
 35 40 45  
 Pro Gly Leu Ala Val Asp Leu Asn His Asp Gly Ile Gly His Trp Ala  
 50 55 60  
 Leu Leu Tyr Glu Phe Gln Asn Lys Ile Gly Tyr Tyr Glu Pro Asp Tyr  
 65 70 75 80  
 Thr Ala Ser Val Ser Asp Gly Met Val Phe Ser His Asp Glu Thr Trp  
 85 90 95  
 Ala Arg Pro Ala Thr Ala Phe Asn Leu Thr Ile Pro Cys Pro Arg Tyr  
 100 105 110  
 Ile Val Ser Glu Gly Lys Trp Val Cys Ser Gly Ile His Gly Ile Gln  
 115 120 125  
 Val Thr Leu Arg Ala Asp Val Asp Ser Phe Ser Leu Gln Ser Asn Cys

130		135		140
Ser Arg Ile Phe Pro Ala Tyr Asn Asp Arg Asp Asp Val Phe Leu Ala				
145		150		155
Asn Ile Lys Asp Ile Ser Leu Val Val Leu Ser Tyr Asp Ala Ala Ser				
		165		170
Phe Arg Ile Gly Val His Cys Thr Leu Pro Tyr Asp Arg Pro Asp Gly				
		180		185
Thr Gln Glu Leu Asn Glu Asn Tyr Leu Tyr Tyr Glu Tyr Ser Arg				
		195		200
				205

<210> 8285  
 <211> 260  
 <212> PRT  
 <213> B.fragilis

<400> 8285

Glu Lys Lys Ser Ser Cys Ser Leu Ile Phe Pro Ala Gly Ile Thr Tyr				
1		5		10
Val Asp Tyr Gly Ser Thr Asn Val Glu Val Asp Lys Pro Glu Gly Val				
		20		25
Asp Asn Ile Leu Ala Val Lys Ala Val Gln Pro Tyr Lys Glu Asp Thr				
		35		40
Asn Ile Ser Val Val Leu Glu Gly Gly Lys Phe Tyr Thr Phe Asp Leu				
		50		55
Arg Tyr Val Pro Ala Pro Glu Arg Phe Ser Phe Val Ile Asp Lys Glu				
65		70		75
Asp Thr Gln Arg Val Ala Ile Leu Asp Glu Lys Glu Arg Ser Tyr Gly				
		85		90
Gln Lys Glu Arg Ile Arg Glu Ala Ile Ala Lys Arg Thr Pro Leu Asp				
		100		105
Leu Gly Leu Lys Asp Lys Asn Ser Gly Val Glu Phe Glu Val Gly Asn				
		115		120
Ile Phe Ile Asp Gly Asp Ile Leu Leu Leu Arg Met Thr Leu Ile Asn				
		130		135
Arg Thr Gln Ile Gly Tyr Thr Thr Asp Phe Met Arg Phe Tyr Ile Gln				
145		150		155
Asp Ala Lys Ile Arg Lys Lys Thr Ala Val Gln Gln Leu Glu Gln Asn				
		165		170
Ile Leu Phe Thr Phe Asp Tyr Pro Glu Glu Val Pro Ala His Glu Ser				
		180		185
Arg Thr Phe Thr Val Ala Met Asn Lys Phe Thr Ile Pro Asp Lys Lys				
		195		200
Arg Leu Ile Ile Glu Ile Gln Glu Lys Asn Gly Gly Arg His Phe Leu				
		210		215
Tyr Lys Leu Lys Asn Lys Ser Leu Leu Thr Ala Glu Glu Val Phe Arg				
225		230		235
Ser Arg Lys Gln Gln Glu Thr Glu Asp Glu Ala Asp Lys Ile Leu Arg				
		245		250
Arg Ile Ala Arg				255
		260		

<210> 8286  
 <211> 134  
 <212> PRT  
 <213> B.fragilis

<400> 8286

Val Asp Met Arg Leu Lys Pro Ile Tyr Ile Thr Thr Leu Leu Leu Leu				
1		5		10
				15

Phe Phe Leu Ser Gly Arg Ala Gln Lys Ile Glu Glu Leu Thr Ala Val  
                   20                  25                  30  
 Pro Leu Gln Ile Gly Tyr Glu Lys Thr Leu His Leu Ile Phe Pro Thr  
                   35                  40                  45  
 Glu Val Lys Tyr Tyr Ser Ile Gly Gly Asp Tyr Val Ile Gly Glu Lys  
                   50                  55                  60  
 Val Val Asn Cys Pro Gly Ile Ile Arg Leu Lys Ala Ala Glu Glu Asn  
                   65                  70                  75                  80  
 Phe Pro Gly Glu Thr Thr Leu Ser Val Val Thr Ala Asp Thr Lys Phe  
                   85                  90                  95  
 Tyr Ser Tyr Ser Ile Ser Tyr Asn Ala His Pro Ala Gln Ser Tyr Val  
                   100                  105                  110  
 Arg Ile Gly Gly Glu Ala Pro Ala Pro Glu Tyr Ala Ala Gly Arg Lys  
                   115                  120                  125  
 Arg Lys Ala Ala Val His  
                   130

&lt;210&gt; 8287

&lt;211&gt; 117

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8287

Asn His Thr Gly Met Ala Met Thr Ile Glu Gln Glu Ile Glu Gln Leu  
 1                  5                  10                  15  
 Val Leu Lys Cys Ile Ala Leu Asp Gly Leu Lys Ala Cys Pro Lys Asp  
                   20                  25                  30  
 Leu Ala Phe Leu Glu Lys Tyr Gly Leu Lys Asn Leu Tyr Phe Phe Ser  
                   35                  40                  45  
 Leu Glu Tyr Ala Met Glu Gly Thr Asp Ala Thr Val Leu Asp Ser Lys  
                   50                  55                  60  
 Ala Lys Gly Leu Ile Arg Trp Tyr Leu Tyr Ser Thr Asp Phe Pro Leu  
                   65                  70                  75                  80  
 Leu Arg Gln Lys Tyr Glu Arg Glu Gly Lys Ala Glu Leu Met Lys Cys  
                   85                  90                  95  
 Leu Tyr Leu Glu Glu Arg Tyr Phe Thr Glu Phe Leu Lys Leu Ser Gly  
                   100                  105                  110  
 Gln Glu Glu Gly Leu  
                   115

&lt;210&gt; 8288

&lt;211&gt; 64

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8288

Ser Phe Trp Gly Lys Arg Gly Ile Glu Lys Glu Ser Val Pro Arg Val  
 1                  5                  10                  15  
 Gln Val Gly Gly Ile Val Trp Val Glu Ser His Ile Val Asn Gly Lys  
                   20                  25                  30  
 Phe Ile Ala Ser Lys Leu Gly Val Lys Leu Thr Pro Pro Asn Asn Pro  
                   35                  40                  45  
 Gly Ile Pro His Lys Arg Arg Gly Ser Ile Ala Cys Ile Gln Met Pro  
                   50                  55                  60

&lt;210&gt; 8289

&lt;211&gt; 65

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8289

Gln Ala Gly Gly Phe Phe Leu Glu Leu Leu Phe Pro Ile Lys Ile Pro  
 1 5 10 15  
 Trp Lys Phe Leu Leu Ser Tyr Gly Ser Ile Ser Leu Lys Thr Ala Arg  
 20 25 30  
 Tyr Asn Thr Trp Leu Gln Phe Tyr Cys Ala Val Ala Phe Pro Met Lys  
 35 40 45  
 Glu Ile Arg Tyr Leu Thr Lys Tyr Ser Thr Leu Lys Ser Ile Leu Leu  
 50 55 60  
 Ile  
 65

&lt;210&gt; 8290

&lt;211&gt; 393

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8290

Gln Lys Ser Met Ile His Pro Leu Leu Thr Thr Ile Lys Lys Arg Phe  
 1 5 10 15  
 Ile Met Lys Lys Val Arg Phe Leu Leu Ala Ala Met Val Ala Met  
 20 25 30  
 Phe Thr Gly Cys Gln Lys Glu Val Val Glu Gln Glu Leu Asp Asn Asn  
 35 40 45  
 Lys Pro Thr Pro Thr Gly Asp Thr Arg Ile Ile Ile Glu Gly Glu Gly  
 50 55 60  
 Met Ile Gly Pro Ala Thr Arg Ser Ser Asp Gly Lys Val Glu Phe Glu  
 65 70 75 80  
 Gly Gly Tyr Ala Thr Gly Ala Gly Leu Tyr Asp Gly Lys Lys Ala Val  
 85 90 95  
 Pro Val Glu Ala His Pro Asp Ala Gly Tyr Glu Val Asn Tyr Phe Tyr  
 100 105 110  
 Gly Gly Pro Glu Asn Gln Pro Lys Lys Tyr Asp Tyr Ala Gln Ser Gly  
 115 120 125  
 Thr Ser Ala Phe Asn Val Tyr Leu Glu Gly Gln Asp His Thr Phe His  
 130 135 140  
 Cys Gly Phe Lys Glu Lys Lys Arg Asp Leu Thr Val Asn Ala Gly Thr  
 145 150 155 160  
 Gly Gly Ser Val Ser Pro Ser Gly Thr Asn Ser Tyr Arg Val Glu Lys  
 165 170 175  
 Pro Ile Ser Ile Thr Ala Thr Pro Asp Ser Gly Tyr Glu Phe Ala Gly  
 180 185 190  
 Trp Thr Val Thr Gln Gly Asp Val Thr Ile Glu Asn Pro Gly Ser Pro  
 195 200 205  
 Ala Thr Thr Ala Thr Leu His Asn Asp Asn Ser Thr Ile Thr Ala Asn  
 210 215 220  
 Phe Lys Ser Gly Ala Glu Leu Val Phe Thr Val Arg Ala Ser Ala Asn  
 225 230 235 240  
 Lys Ile Val Pro Met Pro Thr Leu Gly Ser Gly Pro Tyr Thr Val Asp  
 245 250 255  
 Tyr Gly Asp Gly Lys Val Ala His Glu Val Asn Leu Arg Ala Pro Gly  
 260 265 270  
 Tyr Thr Gln Tyr Pro Gly Ser Tyr His Thr Tyr Ser Ala Asp Gly Glu  
 275 280 285  
 Tyr Thr Val Thr Ile Lys Gly Pro Ala Ala Thr Ala Phe Ser Phe Arg  
 290 295 300  
 Gly Thr Arg Asn Ser Asp Leu Gln Tyr Ile Asn Pro Cys Pro Ala Lys  
 305 310 315 320

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<210> 8291
<211> 141
<212> PRT
<213> B.fragilis
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Glu	Leu	Val	Leu	Leu	Val	Ile	Gly	Thr	Glu	Glu	Glu	Thr	Gly	Arg	Ile
1				5					10					15	
Phe	Arg	Lys	Ala	Arg	Ser	Gly	Met	Asp	Gly	Gly	Thr	Leu	Thr	Gln	Asn
			20					25						30	
Pro	Tyr	Phe	Pro	Asp	Val	Ile	Ala	Ile	Asp	Asn	Ala	Gln	Asp	Gly	Gly
		35					40						45		
Glu	Pro	Asp	Met	Val	Leu	Leu	Thr	Val	Gly	Ala	Tyr	Val	Asp	Asp	Leu
	50					55					60				
Phe	Lys	Leu	Arg	Leu	Val	Asp	Asn	Ala	Glu	Leu	Gln	Arg	Ile	Ala	Ile
65				70						75					80
Gly	Thr	Val	Arg	Leu	Val	Phe	Gly	Lys	Asn	Gly	Ile	Cys	Val	Arg	Leu
				85					90					95	
Val	Asp	Gln	Glu	Gln	Gly	Thr	Gly	Thr	Val	Phe	Leu	Lys	Gly	Lys	Ala
			100					105					110		
Cys	Leu	Ala	Cys	Ser	Arg	Asn	Met	Pro	Phe	Leu	Leu	Glu	Cys	Asp	Phe
		115					120					125			
Gln	Glu	Val	Ser	Val	Gln	Glu	Ala	Leu	Ala	Asp	Cys	Pro			
	130					135					140				

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<210> 8292
<211> 120
<212> PRT
<213> B.fragilis
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Arg	Glu	Val	Phe	His	Ile	Ser	Gly	Lys	Asp	Val	Ile	Gln	Glu	Gln	Phe
1				5					10					15	
Ser	Lys	Gln	Glu	Asp	Thr	Phe	Ser	Ile	Ala	Leu	Gln	Phe	Ser	Lys	Thr
			20					25					30		
Leu	Pro	Gly	Thr	Val	Val	Thr	Trp	Asp	Cys	Arg	Lys	Val	Pro	Leu	Lys
			35				40					45			
Lys	Val	Ala	Phe	Thr	His	Phe	Ala	Asn	Lys	Arg	Ser	Gly	Thr	Val	Leu
						55					60				
Met	Phe	Ser	Ser	Ser	Lys	Val	Glu	Ala	Asn	Ser	Cys	Ala	Phe	Thr	Gln
65					70					75					80
Ser	Ser	Asn	Asn	Pro	Ala	Gly	Ile	Asp	Lys	Ile	Leu	Gly	Ile	Ala	Glu
				85					90					95	
Lys	Val	Glu	Leu	Asn	Phe	Thr	Ala	Glu	Val	His	Pro	Leu	Asn	Val	Phe
				100				105					110		
Ala	Gly	Ile	Glu	Leu	Arg	Ala	Ala								
			115				120								

<210> 8293  
 <211> 230  
 <212> PRT  
 <213> B.fragilis

<400> 8293

Gln Lys Arg Ser His Phe His Ser Val Ile Ile Ile Phe Thr Tyr Ile  
 1 5 10 15  
 Cys Asn Gln Thr Lys Ile Ser Tyr Thr Gln Thr Arg Ile Pro Asn Leu  
 20 25 30  
 Leu Ile Met Lys Lys Leu Leu Leu Thr Thr Leu Leu Ile Phe Gly Thr  
 35 40 45  
 Ala Ile Val His Gly Gln Asp Lys Met Gln Phe Ser Ile Ile Gly Gly  
 50 55 60  
 Tyr Glu His Phe Lys Lys Glu Asn Pro His Asn Gln Thr Ala Gly Tyr  
 65 70 75 80  
 Gly Leu Gly Cys Glu Phe Lys Tyr Tyr Phe Tyr Asn Arg Leu Tyr Ala  
 85 90 95  
 Leu Ala Asn Phe His Ala Gly Ile Tyr Asn Glu Phe Thr Pro Arg Thr  
 100 105 110  
 Ala Met Ala Glu Ile Gly Glu Val Asp Phe Ser Met His Trp Arg Thr  
 115 120 125  
 Arg Glu Tyr Lys Gly Gly Ala Gly Met Gly Ile Asp Leu Leu Lys Thr  
 130 135 140  
 Gln Arg His Asn Ile Tyr Thr Gln Ala Thr Phe Gly Leu Ala Lys Leu  
 145 150 155 160  
 Lys Gln Ser Val Pro Val Ile His Ser Tyr Arg Pro Thr Val Glu Met  
 165 170 175  
 Gly Thr Lys Asn Thr Tyr Leu Leu Arg Tyr Ala Thr Ser Ile Ser Ile  
 180 185 190  
 Gly Tyr Asp Tyr Arg Val Ser Lys Ser Phe Ser Ile Gly Leu Asn Tyr  
 195 200 205  
 Thr Gly Trp Trp Val Ala Asp Val Ala Tyr Arg Asn Thr Leu Asn Ala  
 210 215 220  
 Lys Ile Gly Tyr Asn Phe  
 225 230

<210> 8294  
 <211> 177  
 <212> PRT  
 <213> B.fragilis

<400> 8294

Phe Leu Tyr Pro Val Ser Pro Asp Thr Pro Leu Phe Ile Tyr Lys Ile  
 1 5 10 15  
 Thr Leu Met Lys Ile Lys Val Gly Phe Gly Phe Asp Val His Gln Leu  
 20 25 30  
 Val Glu Gly Arg Glu Leu Trp Leu Gly Gly Ile Leu Leu Glu His Glu  
 35 40 45  
 Lys Gly Leu Leu Gly His Ser Asp Ala Asp Val Leu Val His Ala Ile  
 50 55 60  
 Cys Asp Ala Leu Leu Gly Ala Ala Asn Met Arg Asp Ile Gly Tyr His  
 65 70 75 80  
 Phe Pro Asp Asn Ala Gly Glu Tyr Lys Asn Ile Asp Ser Lys Ile Leu  
 85 90 95  
 Leu Lys Lys Thr Val Glu Leu Ile Ala Ala Lys Gly Tyr Gln Ile Gly  
 100 105 110  
 Asn Ile Asp Ala Thr Ile Cys Ala Glu Arg Pro Lys Leu Lys Ala His  
 115 120 125



Ile Pro Ser Met Gln Gln Val Leu Ala Glu Val Met Gly Ile Asp Ala  
 130 135 140  
 Asp Asp Ile Ser Ile Lys Ala Thr Thr Thr Glu Lys Leu Gly Phe Thr  
 145 150 155 160  
 Gly Arg Glu Glu Gly Ile Ser Ala Tyr Ala Thr Val Leu Ile Asn Arg  
 165 170 175  
 Val

<210> 8295  
 <211> 261  
 <212> PRT  
 <213> B.fragilis

<400> 8295  
 Gly Lys Met Pro Met Leu Ile Leu Leu Ser Cys Ala Lys Thr Met Ser  
 1 5 10 15  
 Asp Val Ser Lys Thr Lys Thr Pro Leu Thr Thr Phe Pro Gly Phe Arg  
 20 25 30  
 Lys Glu Ala Ala Glu Val Ala Leu Gln Met Ser Gln Phe Ser Val Glu  
 35 40 45  
 Glu Leu Glu Arg Leu Leu Lys Val Asn Pro Lys Ile Ala Val Glu Asn  
 50 55 60  
 Tyr Arg Arg Tyr Gln Ala Phe His Ser Glu Gly Thr Arg Glu Leu Pro  
 65 70 75 80  
 Ala Leu Leu Ala Tyr Thr Gly Ile Val Phe Lys Arg Val His Pro Gln  
 85 90 95  
 Asp Phe Ser Glu Glu Asp Phe Cys Tyr Ala Gln Asp His Leu Arg Leu  
 100 105 110  
 Thr Ser Phe Cys Tyr Gly Leu Leu Arg Pro Leu Asp Met Ile Arg Pro  
 115 120 125  
 Tyr Arg Leu Glu Gly Asp Val Arg Leu Pro Glu Pro Gly Asn Arg Thr  
 130 135 140  
 Met Phe Asp Tyr Trp Lys Pro Ile Leu Thr Asp Arg Phe Ile Ala Asp  
 145 150 155 160  
 Ile Lys Lys Ala Gly Val Leu Cys Asn Leu Ala Ser Asp Glu Met  
 165 170 175  
 Arg Gly Leu Phe Asp Trp Lys Arg Val Glu Lys Glu Val Arg Val Ile  
 180 185 190  
 Thr Pro Glu Phe His Val Trp Lys Asn Gly Lys Leu Ala Thr Val Val  
 195 200 205  
 Val Tyr Thr Lys Met Ser Arg Gly Glu Leu Thr Arg Tyr Ile Leu Lys  
 210 215 220  
 Asn Arg Ile Glu Ser Val Glu Gln Leu Lys Thr Phe Ala Trp Glu Gly  
 225 230 235 240  
 Phe Glu Phe Asn Glu Gln Leu Ser Asp Glu Thr Lys Tyr Val Phe Thr  
 245 250 255  
 Asn Gly Lys Thr Glu  
 260

<210> 8296  
 <211> 477  
 <212> PRT  
 <213> B.fragilis

<400> 8296  
 Gly Gln Lys Phe Asn Phe Tyr Ser Asn Lys Lys Met Ser Thr Glu Asn  
 1 5 10 15  
 Glu Glu Trp Arg Glu Asp Ser Lys Ser Glu Asn Thr Asp Ala Gly Arg

	20		25		30
Asp Gly Asn Arg Ser Phe Asn Arg Glu Gly Gly Tyr Ser Arg Pro Ser					
	35		40		45
Tyr Asn Arg Glu Gly Gly Asp Arg Pro Tyr Arg Pro Arg Phe Asn Ser					
	50		55		60
Asn Ser Glu Asp Arg Pro Gln Arg Ser Tyr Gly Asp Arg Pro Gln Arg					
65		70		75	80
Pro Ser Tyr Asn Arg Glu Gly Gly Asp Arg Pro Tyr Arg Pro Arg Phe					
	85		90		95
Asn Ser Glu Gly Gly Asp Arg Pro Gln Arg Ser Tyr Gly Asp Arg Pro					
	100		105		110
Gln Arg Pro Ser Tyr Asn Arg Glu Gly Gly Asp Arg Pro Tyr Arg Pro					
	115		120		125
Arg Phe Asn Ser Glu Gly Gly Asp Arg Pro Gln Arg Ser Tyr Gly Asp					
	130		135		140
Arg Pro Gln Arg Pro Ser Tyr Asn Arg Glu Gly Gly Asp Arg Pro Tyr					
145		150		155	160
Arg Pro Arg Phe Asn Ser Glu Gly Gly Asp Arg Pro Gln Arg Ser Tyr					
	165		170		175
Gly Asp Arg Pro Gln Arg Pro Ser Tyr Asn Arg Glu Gly Gly Asp Arg					
	180		185		190
Pro Tyr Arg Pro Arg Tyr Asn Asn Asp Asn Arg Ser Gln Gly Phe Ser					
	195		200		205
Arg Pro Ile Arg Arg Thr Gly Asp Tyr Asp Pro Asn Ala Lys Tyr Ser					
	210		215		220
Lys Lys Lys Gln Ile Glu Tyr Lys Glu Gln Phe Val Asp Pro Asn Glu					
225		230		235	240
Pro Ile Arg Leu Asn Lys Phe Leu Ala Asn Ala Gly Val Cys Ser Arg					
	245		250		255
Arg Glu Ala Asp Glu Phe Ile Thr Ala Gly Val Val Ser Val Asn Gly					
	260		265		270
Glu Val Val Thr Glu Leu Gly Thr Lys Ile Lys Arg Ala Asp Val Val					
	275		280		285
Lys Phe His Asp Glu Thr Val Ser Ile Glu Arg Lys Val Tyr Val Leu					
	290		295		300
Leu Asn Lys Pro Lys Asp Cys Val Thr Thr Ser Asp Asp Pro Gln Ala					
305		310		315	320
Arg Leu Thr Val Met Asp Leu Val Lys Gly Ala Cys Ala Glu Arg Ile					
	325		330		335
Tyr Pro Val Gly Arg Leu Asp Arg Asn Thr Thr Gly Val Leu Leu Leu					
	340		345		350
Thr Asn Asp Gly Asp Leu Ala Ser Lys Leu Thr His Pro Lys Tyr Leu					
	355		360		365
Lys Lys Lys Ile Tyr His Val Tyr Leu Asp Lys Asn Leu Thr Lys Ala					
	370		375		380
Asp Met Asp Gln Ile Ala Ala Gly Ile Gln Leu Glu Asp Gly Glu Ile					
385		390		395	400
His Ala Asp Ala Ile Ser Tyr Ser Asp Glu Val Lys Arg Asp Gln Val					
	405		410		415
Gly Ile Glu Ile His Ser Gly Lys Asn Arg Ile Val Arg Arg Ile Phe					
	420		425		430
Glu Ser Leu Gly Tyr Lys Val Val Lys Leu Asp Arg Val Phe Phe Ala					
	435		440		445
Gly Leu Thr Lys Lys Gly Leu Arg Arg Gly Glu Trp Arg Tyr Leu Thr					
	450		455		460
Glu Gln Glu Val Asn Phe Leu Arg Met Gly Ser Phe Glu					
465		470		475	

<211> 208  
 <212> PRT  
 <213> B.fragilis

<400> 8297

Lys	Ile	Arg	Leu	Gly	Thr	Thr	Tyr	Ser	Leu	Asp	His	Pro	Glu	Lys	Phe
1			5					10						15	
Leu	Ser	Glu	Lys	Ala	Ile	Ala	Arg	Arg	Gln	Arg	Gln	Gln	Leu	Pro	Val
		20					25					30			
Asp	Ser	Thr	Asp	Leu	Pro	Val	Cys	Arg	Arg	Tyr	Val	Asp	Ala	Ile	Arg
		35					40					45			
Asp	Arg	Gly	Val	Lys	Ile	Val	Ala	Met	Gly	Lys	Trp	Asp	Asn	Phe	Val
	50				55						60				
Thr	Val	Ser	Cys	Asn	Asp	Ser	Ala	Val	Ile	Gly	Glu	Ile	Ala	Ala	Leu
65				70					75						80
Pro	Phe	Val	Arg	Ala	Thr	Glu	Lys	Ile	Trp	Val	Ala	Pro	Ser	Lys	Pro
			85					90						95	
Ala	Ala	Glu	Asp	Lys	Arg	Asp	Ser	Leu	Ala	Asn	Ser	Pro	Leu	Lys	Ser
		100					105						110		
Glu	Asn	Tyr	Tyr	Ser	Pro	Ala	Leu	Arg	Gln	Ile	Glu	Ile	Ser	Tyr	Gly
	115					120						125			
Glu	Lys	Leu	His	Glu	Ala	Gly	Phe	Lys	Gly	Gln	Gly	Met	Thr	Ile	Ala
	130				135					140					
Val	Ile	Asp	Ala	Gly	Tyr	His	Asn	Val	Asp	Lys	Ile	Glu	Ala	Met	Lys
145				150					155						160
Asn	Ile	Arg	Ile	Leu	Ser	Thr	Lys	Asp	Phe	Val	Lys	Pro	Gly	Ser	Asp
			165					170						175	
Ile	Tyr	Ala	Lys	Gly	Ser	His	Gly	Met	Ala	Val	Leu	Ser	Cys	Met	Ala
		180					185						190		
Met	Asn	Asp	Pro	Tyr	Leu	Met	Val	Gly	Thr	Gly	Pro	Glu	Ala	Ser	Tyr
		195				200						205			

<210> 8298  
 <211> 337  
 <212> PRT  
 <213> B.fragilis

<400> 8298

Ile	Val	Lys	Thr	Val	Asn	Lys	Met	Thr	Ser	Gln	Lys	Ser	Gln	Asn	Ser
1			5					10						15	
Asn	Met	Leu	Leu	Ala	Phe	Leu	Thr	Leu	Leu	Gly	Val	Ile	Val	Leu	Val
		20					25					30			
Ala	Val	Val	Gly	Phe	Phe	Met	Leu	Arg	Lys	Gly	Pro	Glu	Ile	Ile	Gln
		35				40					45				
Gly	Gln	Ala	Glu	Val	Thr	Glu	Tyr	Arg	Val	Ser	Ser	Lys	Val	Pro	Gly
	50				55					60					
Arg	Ile	Leu	Glu	Phe	Arg	Val	Lys	Glu	Gly	Gln	Lys	Val	Gln	Ala	Gly
65				70				75							80
Asp	Thr	Leu	Ala	Ile	Leu	Glu	Ala	Pro	Asp	Val	Ile	Ala	Lys	Met	Glu
			85					90						95	
Gln	Ala	Arg	Ala	Glu	Ala	Ala	Ala	Gln	Ala	Gln	Asn	Glu	Lys	Ala	
		100				105						110			
Ile	Lys	Gly	Ala	Arg	Gln	Glu	Gln	Ile	Gln	Ala	Ala	Tyr	Glu	Met	Trp
		115				120						125			
Gln	Lys	Ala	Ile	Ala	Gly	Val	Asp	Ile	Ala	Glu	Lys	Ser	Tyr	Lys	Arg
	130				135					140					
Val	Lys	Asn	Leu	Phe	Asp	Gln	Gly	Val	Met	Pro	Ala	Gln	Lys	Leu	Asp
145				150				155							160
Glu	Val	Thr	Ala	Gln	Arg	Asn	Ala	Ala	Ile	Ala	Thr	Glu	Lys	Ala	Ala

[illegible]

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<210> 8299
<211> 185
<212> PRT
<213> B.fragilis
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<400>	8299														
Ile	Glu	Met	Thr	Glu	Ile	Glu	Lys	Met	Arg	Ser	Gly	Glu	Leu	Ala	Asp
1				5					10					15	
Met	Ser	Ala	Pro	Glu	Leu	Gln	Val	Arg	Phe	Glu	His	Ala	Lys	Lys	Leu
			20					25					30		
Leu	Ala	Arg	Met	Arg	Cys	Leu	Ser	Thr	Tyr	Asp	Glu	Thr	Tyr	Arg	Gly
		35					40					45			
Leu	Leu	Glu	Glu	Leu	Ile	Pro	Asp	Leu	Pro	Ala	Thr	Ser	Val	Ile	Cys
	50					55					60				
Pro	Pro	Phe	His	Cys	Asp	His	Gly	Asp	Gly	Ile	Arg	Leu	Gly	Glu	His
65				70					75					80	
Val	Phe	Val	Asn	Ala	Asn	Cys	Thr	Phe	Leu	Asp	Gly	Ala	Phe	Ile	Thr
			85						90					95	
Ile	Gly	Ser	His	Thr	Leu	Ile	Gly	Pro	Cys	Val	Gln	Ile	Tyr	Thr	Pro
			100					105					110		
His	His	Pro	Met	Asp	Tyr	Leu	Glu	Arg	Arg	Asn	Pro	Lys	Glu	Tyr	Ala
		115					120					125			
Tyr	Pro	Val	Thr	Ile	Gly	Glu	Asp	Cys	Trp	Ile	Gly	Gly	Gly	Ala	Val
	130					135					140				
Val	Cys	Pro	Gly	Val	Thr	Ile	Gly	Asp	Arg	Cys	Val	Ile	Gly	Ala	Gly
145					150					155				160	
Ser	Val	Val	Thr	Lys	Asp	Ile	Pro	Asp	Asp	Cys	Val	Ala	Val	Gly	Asn
				165					170					175	
Pro	Ala	Arg	Val	Ile	Arg	Cys	Arg	Met							
			180					185							

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<210> 8300
<211> 138
<212> PRT
<213> B.fragilis
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&lt;400&gt; 8300

Asp	Ser	Ser	Tyr	Ser	Ile	Glu	Arg	Cys	Gly	Ser	Met	Thr	Leu	Glu	Glu
1				5					10					15	
Ile	Leu	Gln	Ile	Glu	Ala	Gln	Asn	Val	Asp	Cys	Ile	Phe	Leu	Tyr	Gln
		20					25						30		
Glu	Glu	Gly	Ala	Trp	Tyr	Ala	Tyr	Glu	His	Ser	Ala	Phe	Tyr	Cys	Tyr
	35					40					45				
Ser	Leu	Leu	Gly	Ile	Leu	Asp	Ile	Asp	Trp	Leu	Pro	Cys	Pro	Asp	Gly
	50				55						60				
Val	Ser	Ser	Gly	Gln	Lys	Thr	Ile	Arg	Val	Arg	Val	Ser	Glu	Pro	Asp
65					70					75				80	
Lys	Phe	Leu	Cys	Thr	Pro	Leu	Leu	Arg	Leu	Met	Arg	Lys	Arg	Lys	Thr
			85					90					95		
Glu	Tyr	Val	Val	Leu	Cys	Lys	Ile	Ser	Cys	Gly	Gly	Phe	Tyr	Tyr	Trp
			100					105					110		
Arg	Glu	Gln	Gln	Gln	Met	Lys	Phe	Arg	Val	Leu	Gln	Glu	Arg	Glu	Ser
		115					120					125			
Ser	Cys	Thr	Lys	Ile	Asn	Glu	His	Ala	Glu						
	130					135									

&lt;210&gt; 8301

&lt;211&gt; 478

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8301

Ser	Leu	Leu	Tyr	Lys	Leu	Ser	Leu	Pro	Leu	Cys	Leu	Ile	Thr	Gln	Glu
1				5					10					15	
Lys	Glu	Leu	Ile	Leu	Gln	Pro	Asp	Asn	Tyr	Leu	Asn	Asp	Asn	Met	Lys
		20					25						30		
Leu	Asp	Leu	Leu	Thr	Ala	Ile	Ser	Pro	Ile	Asp	Gly	Arg	Tyr	Arg	Gly
	35					40					45				
Lys	Ala	Glu	Ala	Leu	Ala	Ala	Tyr	Phe	Ser	Glu	Tyr	Ala	Leu	Ile	Lys
	50				55					60					
Tyr	Arg	Val	Gln	Val	Glu	Val	Glu	Tyr	Phe	Ile	Thr	Leu	Cys	Glu	Leu
65				70					75					80	
Pro	Leu	Pro	Gln	Leu	Lys	Gly	Ile	Asp	Lys	Ser	Val	Phe	Glu	Ser	Leu
			85					90					95		
Arg	Asn	Ile	Tyr	Arg	Asn	Phe	Thr	Glu	Ala	Asp	Ala	Gln	Arg	Ile	Lys
		100						105					110		
Asp	Ile	Glu	Ser	Val	Thr	Asn	His	Asp	Val	Lys	Ala	Val	Glu	Tyr	Phe
	115					120						125			
Leu	Lys	Glu	Glu	Phe	Asp	Lys	Leu	Gly	Gly	Leu	Glu	Glu	Tyr	Lys	Glu
	130					135					140				
Phe	Ile	His	Phe	Gly	Leu	Thr	Ser	Gln	Asp	Ile	Asn	Asn	Thr	Ser	Ile
145					150				155					160	
Pro	Leu	Ser	Ile	Lys	Glu	Ala	Leu	Glu	Gln	Val	Tyr	Tyr	Pro	Leu	Ile
			165					170					175		
Glu	Glu	Leu	Ile	Ala	Gln	Leu	Lys	Thr	Tyr	Ala	Thr	Glu	Trp	Glu	Ser
		180					185						190		
Ile	Pro	Met	Leu	Ala	Lys	Thr	His	Gly	Gln	Pro	Ala	Ser	Pro	Thr	Arg
	195					200						205			
Leu	Gly	Lys	Glu	Ile	Met	Val	Phe	Val	Tyr	Arg	Leu	Glu	Arg	Gln	Leu
	210				215					220					
Ala	Thr	Leu	Lys	Ala	Cys	Pro	Val	Thr	Ala	Lys	Phe	Gly	Gly	Ala	Thr
225				230					235					240	
Gly	Asn	Tyr	Asn	Ala	His	His	Val	Ala	Tyr	Pro	Glu	Tyr	Asp	Trp	Lys
			245					250					255		

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Ala Phe Gly Asn Gln Phe Val Ala Glu Lys Leu Gly Leu Glu Arg Glu  
 260 265 270  
 Glu Tyr Thr Thr Gln Ile Ser Asn Tyr Asp Asn Leu Ser Ala Ile Phe  
 275 280 285  
 Asp Ala Met Lys Arg Ile Asn Thr Val Met Ile Asp Met Asn Arg Asp  
 290 295 300  
 Phe Trp Gln Tyr Ile Ser Met Glu Tyr Phe Lys Gln Lys Ile Lys Ala  
 305 310 315 320  
 Gly Glu Val Gly Ser Ser Ala Met Pro His Lys Val Asn Pro Ile Asp  
 325 330 335  
 Phe Glu Asn Ala Glu Gly Asn Leu Gly Ile Ala Asn Ala Ile Leu Glu  
 340 345 350  
 His Leu Ala Val Lys Leu Pro Val Ser Arg Leu Gln Arg Asp Leu Thr  
 355 360 365  
 Asp Ser Thr Val Leu Arg Asn Val Gly Thr Pro Phe Gly His Ile Val  
 370 375 380  
 Ile Ala Ile Gln Ser Ser Leu Lys Gly Leu Arg Lys Leu Leu Leu Asn  
 385 390 395 400  
 Glu Thr Ala Ile Tyr Arg Asp Leu Asp Asn Cys Trp Ser Val Val Ala  
 405 410 415  
 Glu Ala Ile Gln Thr Ile Leu Arg Arg Glu Ala Tyr Pro His Pro Tyr  
 420 425 430  
 Glu Ala Leu Lys Ala Leu Thr Arg Thr Asn Gln Ala Ile Thr Glu Thr  
 435 440 445  
 Ser Ile Lys Glu Phe Ile Glu Gly Leu Asp Val Asn Glu Glu Ile Lys  
 450 455 460  
 Lys Glu Leu Arg Val Ile Thr Pro His Ser Tyr Thr Gly Ile  
 465 470 475

&lt;210&gt; 8302

&lt;211&gt; 642

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8302

Pro Glu Asn His Phe Asn Lys Asn Asn Met Lys Lys Ile Thr Phe Ile  
 1 5 10 15  
 Ala Ile Leu Leu Leu Cys Ile Cys Ser Leu Thr Lys Ala Lys Glu Lys  
 20 25 30  
 Val Ile Glu Gln Pro Pro Phe Ile Ala Trp Thr Ser Thr Ser Ile Gln  
 35 40 45  
 Val Asp Lys Val Val Leu Ser Asp Thr Ala Thr Val Leu Tyr Ile Lys  
 50 55 60  
 Ala Phe Tyr His Pro Lys Gln Trp Ile Arg Ile Ser Gly Gln Ser Phe  
 65 70 75 80  
 Leu Lys Asp Asn Asn Gly Glu Thr Tyr Thr Leu Arg Ser Gly Ile Gly  
 85 90 95  
 Ile Lys Pro Asp Thr Glu Phe Trp Met Pro Glu Ser Gly Glu Gly Glu  
 100 105 110  
 Phe Arg Leu Val Phe Pro Pro Ile Pro Ala Ser Ala Thr Ser Ile Asp  
 115 120 125  
 Phe Ser Glu Gly Asp Asn Val Gln Gly Ala Phe Lys Ile Trp Gly Ile  
 130 135 140  
 Gln Leu Lys Gly Lys Ala Leu Pro Glu Leu Leu Leu Pro Gln Glu Ala  
 145 150 155 160  
 Ile Val His Lys Ile Asp Ile Asn Asp Glu Leu Pro Glu Pro Lys Ile  
 165 170 175  
 Glu Tyr Lys Asp Ala Thr Ile Lys Gly Arg Ile Leu Asp Tyr Arg Pro  
 180 185 190

Gly Leu Val Ser Lys Ile Val Pro Ile Ile Phe Asp Pro Val Lys Gly  
 195 200 205  
 Ala Tyr Glu Ser Glu Glu Val Lys Ile Asn Asn Asp Gly Thr Phe Val  
 210 215 220  
 Thr Arg Val Lys Val Pro Thr Thr Thr Ser Ala Ala Ile Arg Leu Phe  
 225 230 235 240  
 Gly Lys Met Ile Thr Phe Tyr Ala Val Pro Gly Glu Glu Ser Ser Val  
 245 250 255  
 Ile Ile Asn Thr Arg Glu Leu Cys Arg Gln Gln Ser Lys Phe His Lys  
 260 265 270  
 Asp Asp Lys Pro Tyr Gly Glu Ala Val Tyr Phe Gly Gly Thr Leu Ala  
 275 280 285  
 Gly Leu Ser Gln Glu Tyr Ser Asn Cys Thr Leu Lys Thr Ser Ile Leu  
 290 295 300  
 Asn Asp Tyr Arg Gln Leu Phe Lys Asp Val Ala Gly Met Asp Ala Gly  
 305 310 315 320  
 Ala Tyr Lys Asp Phe Ile Tyr Gly Lys Arg Ala Asn Leu Leu Ala Ser  
 325 330 335  
 Ile Glu Lys Ala Pro Ile Ser Lys Ala Leu Lys Ala Val Leu Gly Asn  
 340 345 350  
 Gln Val Asp Ala Glu Ala Ala Gln Ala Ile Ser Leu Thr Glu Met Val  
 355 360 365  
 Ile Lys Gln Ala Tyr Thr Met Glu His Lys Met Ser Lys Glu Glu Ala  
 370 375 380  
 Arg Glu Tyr Phe Asn Thr Ala Gln Ile Glu Leu Pro Glu Asn Tyr Tyr  
 385 390 395 400  
 Ala Asn Ala Phe Arg Pro Leu Ala Ser Ile Asn Thr Met Ala Ala Leu  
 405 410 415  
 Tyr Asn Ser Lys Leu Ser Glu Leu Ile Pro Tyr Tyr Leu Arg Arg Arg  
 420 425 430  
 Thr Asp Glu Leu Thr Lys Ala Trp Gly Thr Asp Lys Gly Ile Tyr Phe  
 435 440 445  
 Asp Ile Asn Lys Ala Gly Glu Leu Tyr Ser Ser Ile Lys Glu Phe Thr  
 450 455 460  
 Pro Leu Thr Ala Glu Gln Glu Val Ile Leu Ala Thr Leu Pro Pro Ala  
 465 470 475 480  
 Cys Gln Asn Glu Val Arg Asp Ala Asn Asn Gln Leu Leu Lys Thr Leu  
 485 490 495  
 Glu Ala Asn Lys Lys Lys Thr Gly Phe Thr Ile Asn Glu Val Gly Asp  
 500 505 510  
 Val Ser Asn Glu Glu Leu Phe Ser Ser Ile Ile Ser Lys Tyr Arg Gly  
 515 520 525  
 Lys Val Ile Leu Val Asp Phe Trp Ala Thr Trp Cys Gly Pro Cys Arg  
 530 535 540  
 Met Ala Asn Lys Ala Met Leu Pro Leu Lys Glu Glu Leu Lys Gly Lys  
 545 550 555 560  
 Asp Ile Val Tyr Leu Tyr Ile Thr Gly Glu Thr Ser Pro Leu Lys Thr  
 565 570 575  
 Trp Glu Asn Met Ile Pro Asp Ile His Gly Glu His Phe Arg Leu Thr  
 580 585 590  
 Asp Ala Gln Trp Ser Phe Leu Gly Asp Lys Phe Asp Ile Arg Gly Val  
 595 600 605  
 Pro Thr Tyr Leu Ile Ile Asp Arg Glu Gly Asn Val Lys His Gln Lys  
 610 615 620  
 Thr Gly Phe Pro Gly Val Ala Gln Ile Lys Glu Glu Leu Met Lys Val  
 625 630 635 640  
 Tyr Asp

<210> 8303  
 <211> 344  
 <212> PRT  
 <213> B.fragilis

<400> 8303

Leu Ile Thr Asn Asp Met Lys Glu Ile Asp Trp Ala Asn Leu Ser Phe  
 1 5 10 15  
 Gly Tyr Met Lys Thr Asp Tyr Asn Val Arg Ile Asn Phe Arg Asn Gly  
 20 25 30  
 Ala Trp Gly Glu Leu Glu Ile Ser Ser Ser Glu Val Leu Asn Leu His  
 35 40 45  
 Met Ala Ala Thr Cys Leu His Tyr Gly Gln Glu Ala Phe Glu Gly Leu  
 50 55 60  
 Lys Ala Phe Arg Gly Lys Asp Gly Lys Val Arg Ile Phe Arg Leu Glu  
 65 70 75 80  
 Glu Asn Ala Ala Arg Leu Gln Ser Thr Cys Gln Gly Ile Met Met Ala  
 85 90 95  
 Glu Leu Pro Thr Glu Arg Phe Lys Glu Ala Ile Leu Lys Val Val Lys  
 100 105 110  
 Leu Asn Glu Arg Phe Ile Pro Pro Tyr Glu Ser Gly Ala Ser Leu Tyr  
 115 120 125  
 Ile Arg Pro Leu Leu Ile Gly Thr Ser Ala Gln Val Gly Val His Pro  
 130 135 140  
 Ala Asp Glu Tyr Met Phe Val Val Phe Val Thr Pro Val Gly Pro Tyr  
 145 150 155 160  
 Phe Lys Gly Gly Phe Ser Thr Asn Pro Tyr Val Ile Ile Arg Glu Tyr  
 165 170 175  
 Asp Arg Ala Ala Pro His Gly Thr Gly Ile Tyr Lys Val Gly Gly Asn  
 180 185 190  
 Tyr Ala Ala Ser Leu Arg Ala Asn Lys Lys Ala His Asp Leu Gly Tyr  
 195 200 205  
 Ser Cys Glu Phe Tyr Leu Asp Ala Lys Asp Lys Lys Tyr Ile Asp Glu  
 210 215 220  
 Cys Gly Ala Ala Asn Phe Phe Gly Ile Lys Asp Asn Thr Tyr Ile Thr  
 225 230 235 240  
 Pro Lys Ser Thr Ser Ile Leu Pro Ser Ile Thr Asn Lys Ser Leu Met  
 245 250 255  
 Gln Leu Ala Glu Asp Met Gly Met Lys Val Glu Arg Arg Pro Val Pro  
 260 265 270  
 Glu Glu Glu Leu Ser Thr Phe Glu Glu Ala Gly Ala Cys Gly Thr Ala  
 275 280 285  
 Ala Val Ile Ser Pro Ile Glu Arg Ile Asp Asp Leu Glu Asn Gly Lys  
 290 295 300  
 Ser Tyr Val Ile Ser Lys Asp Gly Lys Pro Gly Pro Val Cys Glu Lys  
 305 310 315 320  
 Leu Tyr Asn Lys Leu Arg Gly Ile Gln Tyr Gly Asp Glu Pro Asp Thr  
 325 330 335  
 His Gly Trp Val Thr Ile Val Glu  
 340

<210> 8304  
 <211> 268  
 <212> PRT  
 <213> B.fragilis

<400> 8304

Met Asn Tyr Lys Ile Thr Thr Leu Ala Glu Asn Ser Val Tyr Gly Lys  
 1 5 10 15



Gly Leu Gln Gly Glu His Gly Leu Ser Leu Leu Val Glu Ala Gly Glu  
 20 25 30  
 His Lys Val Leu Phe Asp Thr Gly Ala Ser Asp Leu Phe Leu Arg Asn  
 35 40 45  
 Ala Arg Leu Leu Gly Leu Asp Leu Ser Asp Val Glu Tyr Val Val Leu  
 50 55 60  
 Ser His Gly His Arg Asp His Thr Gly Gly Leu Tyr Ala Phe Leu Lys  
 65 70 75 80  
 Met Asn Ser Val Ala Lys Val Val Cys Lys Arg Glu Val Phe Arg Lys  
 85 90 95  
 Lys Phe Lys Asn Glu Arg Glu Asn Gly Met Leu His Pro Glu Ala Leu  
 100 105 110  
 Asp Lys Ser Arg Phe Trp Leu Val Asp Glu Thr Thr Glu Ile Val Pro  
 115 120 125  
 Gly Val Phe Ala Phe Pro Asp Val Lys Val Val Asp Arg Asn Asp Thr  
 130 135 140  
 His Phe Glu His Phe Phe Thr Glu Ile Glu Gly Glu Met Arg Pro Asp  
 145 150 155 160  
 Thr Phe Glu Asp Glu Leu Ala Leu Val Leu Lys Gly Glu Lys Ser Leu  
 165 170 175  
 Ser Val Leu Ser Ala Cys Ser His Arg Gly Ile Thr Asn Ile Ile Arg  
 180 185 190  
 Ala Val Gln Asn Ala Phe Pro Gly Leu Gly Leu Lys Leu Val Met Gly  
 195 200 205  
 Gly Phe His Ile His Asn Ala Glu Glu Glu Lys Phe Asn Val Ile Ser  
 210 215 220  
 Ala Phe Leu Gly Met Lys Leu Pro Lys Arg Leu Gly Val Cys His Cys  
 225 230 235 240  
 Thr Gly Ile Asp Lys Tyr Ala Leu Phe Arg Gln Gln Phe Asn Asp Arg  
 245 250 255  
 Val Phe Tyr Asn Tyr Thr Gly Trp Val Glu Thr Ile  
 260 265

&lt;210&gt; 8305

&lt;211&gt; 282

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8305

Arg Lys Asn Lys Met Ser Arg Thr Asn Phe Asp Thr Leu Leu Glu Ala  
 1 5 10 15  
 Gly Cys His Phe Gly His Leu Lys Arg Lys Trp Asn Pro Ala Met Ala  
 20 25 30  
 Pro Tyr Ile Phe Met Glu Arg Asn Gly Ile His Ile Ile Asp Leu His  
 35 40 45  
 Lys Thr Val Ala Lys Val Asp Glu Ala Ala Glu Ala Leu Lys Gln Ile  
 50 55 60  
 Ala Lys Ser Gly Lys Lys Val Leu Phe Val Ala Thr Lys Lys Gln Ala  
 65 70 75 80  
 Lys Gln Val Val Ala Glu Lys Ala Ala Ser Val Asn Met Pro Tyr Val  
 85 90 95  
 Ile Glu Arg Trp Pro Gly Gly Met Leu Thr Asn Phe Pro Thr Ile Arg  
 100 105 110  
 Lys Ala Val Lys Lys Met Thr Thr Ile Asp Lys Leu Thr Ala Asp Gly  
 115 120 125  
 Thr Tyr Ser Asn Leu Ser Lys Arg Glu Ile Leu Gln Ile Ser Arg Gln  
 130 135 140  
 Arg Ala Lys Leu Asp Lys Thr Leu Gly Ser Ile Ala Asp Leu Thr Arg  
 145 150 155 160

Leu Pro Ser Ala Leu Phe Val Ile Asp Val Met Lys Glu Asn Ile Ala  
 165 170 175  
 Val Arg Glu Ala Asn Arg Leu Gly Ile Pro Val Phe Gly Ile Val Asp  
 180 185 190  
 Thr Asn Ser Asp Pro Thr Asn Ile Asp Phe Val Ile Pro Ala Asn Asp  
 195 200 205  
 Asp Ala Thr Lys Ser Val Glu Val Ile Leu Asp Ala Cys Cys Ala Ala  
 210 215 220  
 Met Ile Glu Gly Leu Glu Arg Lys Ala Glu Lys Ile Asp Met Glu  
 225 230 235 240  
 Ala Ala Gly Glu Ala Pro Ala Asn Lys Gly Lys Lys Lys Ser Ala Lys  
 245 250 255  
 Ala Arg Leu Asp Lys Ser Asp Glu Glu Ala Ile Asn Ala Ala Lys Ala  
 260 265 270  
 Ala Ala Phe Leu Lys Glu Asp Glu Glu Ala  
 275 280

<210> 8306  
 <211> 93  
 <212> PRT  
 <213> B.fragilis

<400> 8306

Gln Lys Asn Asn Arg Lys Pro Met Asn Ala Val Ala Glu Leu Leu Pro  
 1 5 10 15  
 Ala Phe Pro Gln Gly His Thr Ser Ile Tyr Leu Lys Cys Tyr Tyr Ile  
 20 25 30  
 Val Leu Ser Phe Asn Ser Thr Thr Lys Gly Ile Glu Gln Lys Arg Glu  
 35 40 45  
 Ile Lys Lys Ile Ala Lys Ser Ile Cys Leu Leu Gln Lys Glu Ser Val  
 50 55 60  
 Tyr Leu Lys Tyr Lys Lys Thr Gln Ile Trp Gln Thr Pro Asn Tyr Arg  
 65 70 75 80  
 Glu Tyr Pro Lys Leu Asn Lys Leu Cys Cys Met Pro Asn  
 85 90

<210> 8307  
 <211> 239  
 <212> PRT  
 <213> B.fragilis

<400> 8307

His Ile Thr Lys Met Lys Lys Gln Ile Ile His Arg Trp Met Leu Met  
 1 5 10 15  
 Ala Val Phe Cys Leu Gly Ala Ser Leu Ile Gly Ile Asn Ala Gln Glu  
 20 25 30  
 Lys Asp Trp Ala Asn Leu Gln Arg Tyr Ala Gln Gln Asn Ala Glu Leu  
 35 40 45  
 Pro Lys Pro Asp Lys Asn Glu Lys Arg Val Val Phe Met Gly Asn Ser  
 50 55 60  
 Ile Thr Glu Gly Trp Val Asn Thr His Pro Asp Phe Phe Lys Ser Asn  
 65 70 75 80  
 Gly Tyr Ile Gly Arg Gly Ile Gly Gly Gln Thr Ser Tyr Gln Phe Leu  
 85 90 95  
 Val Arg Phe Arg Glu Asp Val Ile Asn Leu Ser Pro Ala Leu Val Val  
 100 105 110  
 Ile Asn Ala Ala Thr Asn Asp Ile Ala Glu Asn Thr Gly Ala Tyr His  
 115 120 125  
 Glu Asp Arg Thr Phe Gly Asn Ile Val Ser Met Val Glu Leu Ala Lys

130	135	140
Ala Asn His Ile Lys Val	Ile Leu Thr Thr Thr	Leu Pro Ala Ala Ala
145	150	155
Phe Gly Trp Asn Pro Ala	Ile Lys Asp Ala Pro	Gln Lys Ile Ala Ser
	165	170
Leu Asn Ala Arg Leu Lys	Ala Tyr Ala Gln Thr	Asn Lys Ile Pro Phe
	180	185
Val Asp Tyr Tyr Ser Ser	Met Val Ser Gly Ser	Asn Lys Ala Leu Asn
	195	200
Pro Ala Tyr Thr Lys Asp	Gly Val His Pro Thr	Ser Glu Gly Tyr Asp
	210	215
Val Met Glu Asn Leu Ile	Gln Gln Ala Ile Asn	Lys Thr Leu Arg
225	230	235

&lt;210&gt; 8308

&lt;211&gt; 160

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8308

His Leu Lys Asn Lys Leu	Arg Val Asp Thr Leu	Ser Tyr Lys Thr Ile
1	5	10
Ser Ala Asn Lys Ala Thr	Val Thr Lys Glu Trp Val	Ile Val Asp Ala
	20	25
Thr Asp Gln Thr Leu Gly	Arg Leu Gly Ala Lys	Val Ala Lys Leu Leu
	35	40
Arg Gly Lys Tyr Lys Pro	Asn Phe Thr Pro His	Val Asp Cys Gly Asp
	50	55
Asn Val Ile Ile Ile Asn	Ala Asp Lys Val Lys	Leu Ser Gly Asn Lys
65	70	75
Trp Asn Asp Arg Val Tyr	Leu Ser Tyr Thr Gly	Tyr Pro Gly Gly Gln
	85	90
Arg Glu Met Thr Pro Ala	Arg Leu Ile Ala Lys	Pro Asn Gly Glu Asp
	100	105
Arg Leu Leu Arg Lys Val	Val Lys Gly Met Leu	Pro Lys Asn Arg Leu
	115	120
Gly Ala Lys Leu Leu Ser	Asn Met Tyr Val Tyr	Ala Gly Ser Glu His
	130	135
Lys His Asp Ala Gln Asn	Pro Lys Ala Ile Asp	Ile Asn Ser Leu Lys
145	150	155

&lt;210&gt; 8309

&lt;211&gt; 252

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8309

Met Gly Lys Asn Lys Leu	Glu Lys Phe Ala Asp	Met Ala Ser Tyr Pro
1	5	10
His Val Phe Glu Tyr Pro	Tyr Ser Ala Val Asp	Asn Val Pro Phe Asp
	20	25
Met Lys Gly Lys Trp His	Lys Glu Phe Phe Lys	Asn Asp Asn Pro Ile
	35	40
Val Leu Glu Leu Gly Cys	Gly Arg Gly Glu Tyr	Thr Val Gly Leu Gly
	50	55
Arg Met Phe Pro Asp Lys	Asn Phe Ile Ala Val	Asp Ile Lys Gly Ala
65	70	75
Arg Met Trp Thr Gly Ala	Thr Glu Ser Leu Gln	Ala Gly Met Lys Asn
	85	90

Val Ala Phe Leu Arg Thr Asn Ile Glu Ile Ile Asp Arg Phe Phe Ala  
 100 105 110  
 Glu Gly Glu Val Ser Glu Ile Trp Leu Thr Phe Ser Asp Pro Gln Met  
 115 120 125  
 Lys Lys Ala Thr Lys Arg Leu Thr Ser Thr Tyr Phe Met Glu Arg Tyr  
 130 135 140  
 Arg Lys Phe Leu Val Ser Asn Gly Ile Ile His Leu Lys Thr Asp Ser  
 145 150 155 160  
 Asn Phe Met Phe Thr Tyr Thr Glu Tyr Met Ile Glu Glu Asn Gly Leu  
 165 170 175  
 Pro Val Glu Phe Ile Thr Glu Asp Leu Tyr His Ser Asp Leu Val Asp  
 180 185 190  
 Asp Ile Leu Gly Ile Lys Thr Tyr Tyr Glu Gln Gln Trp Leu Asp Arg  
 195 200 205  
 Gly Leu Ser Ile Lys Tyr Ile Lys Phe Leu Leu Pro Gln Glu Gly Glu  
 210 215 220  
 Leu Arg Glu Pro Asp Ile Glu Ile Glu Leu Asp Ser Tyr Arg Ser Tyr  
 225 230 235 240  
 Asn Arg Ser Lys Arg Ser Gly Leu Gln Thr Ser Lys  
 245 250

&lt;210&gt; 8310

&lt;211&gt; 486

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8310

Asp Ala Met Lys Lys Leu Leu Phe Leu Phe Phe Leu Leu Thr Thr Pro  
 1 5 10 15  
 Phe Ser Leu Lys Ser Gln Gly Ile Leu Ser Leu Asp Ser Cys Arg Ala  
 20 25 30  
 Leu Ala Ile Ala Asn Asn Lys Glu Leu Leu Ile Ser Gly Glu Lys Ile  
 35 40 45  
 Asn Ala Ala His Tyr Gln Lys Lys Ala Ala Phe Thr Asn Tyr Leu Pro  
 50 55 60  
 Asn Phe Ser Ala Thr Gly Ala Tyr Met Arg Asn Gln Lys Glu Phe Ser  
 65 70 75 80  
 Leu Leu Asn Asn Asp Gln Lys Ala Ala Leu Ser Gly Leu Gly Thr Ser  
 85 90 95  
 Val Ser Gly Pro Leu Gln Gln Ala Ala Gln Val Ile Gly Gln Leu His  
 100 105 110  
 Pro Glu Leu Ala Pro Met Leu Ser Gln Leu Gly Gly Ala Ile Val Pro  
 115 120 125  
 Ala Leu Asn Glu Ala Gly Thr Ala Ile Val Asp Ala Phe Arg Thr Asp  
 130 135 140  
 Thr Arg Asn Val Tyr Ala Gly Ala Ile Thr Leu Thr Gln Pro Leu Tyr  
 145 150 155 160  
 Met Gly Gly Lys Ile Arg Ala Tyr Asn Lys Ile Thr Lys Tyr Ala Glu  
 165 170 175  
 Glu Leu Ala Arg Gln Gln His Asn Ser Gly Met Gln Glu Val Ile Leu  
 180 185 190  
 Ser Thr Asp Gln Ala Tyr Trp Gln Val Ile Ser Leu Val Asn Lys Lys  
 195 200 205  
 Lys Leu Ala Glu Ser Tyr Leu Lys Leu Leu Gln Lys Leu Asp Ser Asp  
 210 215 220  
 Val Glu Lys Met Ile Ala Glu Gly Val Ala Thr Lys Ala Asp Gly Leu  
 225 230 235 240  
 Ser Val Arg Val Lys Val Asn Glu Ala Glu Met Thr Leu Thr Lys Val  
 245 250 255

100 105 110 115 120 125 130 135 140 145 150 155 160 165 170 175 180 185 190 195 200 205 210 215 220 225 230 235 240 245 250

Glu Asp Gly Leu Ser Leu Ser Arg Met Leu Leu Cys Gln Leu Cys Gly  
 260 265 270  
 Ile Asp Leu Ser Thr Pro Ile Val Leu Ala Asp Glu Gln Val Asp Asp  
 275 280 285  
 Leu Pro Leu Ile Pro Ala Thr Thr Asn Phe Glu Ile Glu Thr Ala Tyr  
 290 295 300  
 Ala Asn Arg Pro Glu Ile Arg Ser Leu Glu Leu Ala Ala Lys Ile Tyr  
 305 310 315 320  
 Gln Gln Lys Ile Asn Val Thr Arg Ser Glu His Leu Pro Ser Val Ala  
 325 330 335  
 Leu Met Gly Asn Tyr Met Val Thr Asn Pro Ser Val Phe Asn Ser Phe  
 340 345 350  
 Glu Asn Lys Phe Lys Gly Met Trp Asn Val Gly Val Met Val Gln Leu  
 355 360 365  
 Pro Ile Trp His Trp Gly Glu Gly Ile Tyr Lys Val Lys Ala Ala Lys  
 370 375 380  
 Ala Glu Ala Arg Ile Ala Gln Tyr Gln Leu Glu Asp Ala Lys Glu Lys  
 385 390 395 400  
 Ile Glu Leu Gln Val Asn Gln Ser Ala Phe Lys Val Asn Glu Ala Ala  
 405 410 415  
 Lys Lys Leu Ala Met Ala Lys Lys Asn Leu Glu Lys Ala Asp Glu Asn  
 420 425 430  
 Leu Arg Tyr Ala Thr Leu Gly Phe Glu Glu Gly Val Ile Ala Pro Ser  
 435 440 445  
 Asn Val Leu Glu Ala His Thr Ala Trp Leu Ser Ala Gln Ser Glu Lys  
 450 455 460  
 Ile Asp Ala Gln Ile Asp Val Lys Leu Thr Glu Ile Tyr Leu Gln Lys  
 465 470 475 480  
 Ser Leu Gly Thr Leu Lys  
 485

&lt;210&gt; 8311

&lt;211&gt; 420

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8311

Ile Arg Ala Leu Met Lys Asp Ile Ser Leu Lys Asp Lys Ile Thr Gln  
 1 5 10 15  
 Gly Ile Asn Asp Leu Phe Tyr Ile Trp Lys Arg Glu Phe Arg Thr Thr  
 20 25 30  
 Phe Arg Asp Gln Gly Val Leu Ile Phe Phe Val Leu Val Pro Leu Val  
 35 40 45  
 Tyr Pro Leu Ile Tyr Ser Phe Ile Tyr Thr Asn Glu Val Val Arg Glu  
 50 55 60  
 Val Pro Ala Val Val Val Asp Asp Ser His Ser Ser Leu Ser Arg Glu  
 65 70 75 80  
 Tyr Leu Arg Lys Val Asp Ala Thr Pro Asp Ile Gln Ile Val Ala Tyr  
 85 90 95  
 Cys Ala Asp Met Glu Glu Ala Lys Gln Met Leu Lys Asp Arg Leu Ala  
 100 105 110  
 Tyr Gly Ile Ile Tyr Ile Pro Lys Asp Phe Ser Ser Asp Ile Ala Gln  
 115 120 125  
 Gly Lys Gln Thr Gln Val Ser Ile Tyr Cys Asp Met Ser Gly Leu Leu  
 130 135 140  
 Tyr Tyr Lys Ser Met Leu Leu Ala Asn Thr Ala Val Ser Leu Asp Met  
 145 150 155 160  
 Asn Glu Asp Ile Lys Ile Ala Arg Ser Gly Asn Thr Thr Asp Arg Gln  
 165 170 175

Asp Glu Ile Thr Ala Tyr Pro Ile Glu Tyr Glu Asp Val Ala Met Phe  
 180 185 190  
 Asn Pro Thr Asn Gly Phe Ala Ala Phe Leu Ile Pro Ala Val Leu Ile  
 195 200 205  
 Leu Ile Ile Gln Gln Thr Leu Leu Leu Gly Ile Gly Leu Ser Ala Gly  
 210 215 220  
 Thr Ala Arg Glu Asn Asn Arg Phe Lys Asp Leu Val Pro Ile Asn Arg  
 225 230 235 240  
 His Tyr Asn Gly Thr Leu Arg Ile Val Leu Gly Lys Gly Leu Ser Tyr  
 245 250 255  
 Phe Met Val Tyr Ala Leu Val Ser Val Tyr Val Leu Cys Ala Val Pro  
 260 265 270  
 Arg Met Phe Ser Leu Asn Gln Ile Gly Gln Pro Gly Thr Leu Ala Leu  
 275 280 285  
 Phe Ile Leu Pro Tyr Leu Met Ala Cys Ile Phe Phe Ala Met Thr Ala  
 290 295 300  
 Ser Ile Ala Ile Arg Asn Arg Glu Thr Cys Met Leu Ile Phe Val Phe  
 305 310 315 320  
 Thr Ser Val Pro Leu Leu Phe Ile Ser Gly Ile Ser Trp Pro Gly Ala  
 325 330 335  
 Ala Ile Pro Pro Phe Trp Lys Tyr Phe Ser Tyr Ile Phe Pro Ser Thr  
 340 345 350  
 Phe Gly Ile Asn Gly Phe Val Arg Ile Asn Asn Met Gly Ala Thr Leu  
 355 360 365  
 Ser Glu Ile Pro Phe Glu Tyr Lys Ala Leu Trp Ile Gln Thr Gly Phe  
 370 375 380  
 Tyr Phe Leu Thr Thr Cys Trp Val Tyr Arg Trp Gln Ile Ile Lys Ser  
 385 390 395 400  
 Arg Lys His Val Ile Asp Lys Tyr Lys Glu Met Lys Asn Arg Gly Lys  
 405 410 415  
 Glu Phe Phe Ser  
 420

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 <212> PRT  
 <213> B.fragilis

<400> 8312  
 Leu Leu Leu Glu Thr Lys Ile Ile Ser Thr Phe Glu Ala Ser Ile Ser  
 1 5 10 15  
 Ser Cys Arg Arg Cys Lys Gln Ser Thr Tyr Asn Asn Lys Thr His Val  
 20 25 30  
 Met Lys Arg Lys Met Met Ser Leu Leu Leu Ala Leu Ala Val Ile Ser  
 35 40 45  
 Gly Ser Ser Val Tyr Ala Lys Val Ile Asp Val Met Ser Pro Asn Gly  
 50 55 60  
 Ala Ile Lys Val Ser Val Asp Ile Lys Asp Arg Ile Tyr Tyr Ser Val  
 65 70 75 80  
 Ser Tyr Asp Asn Asp Gln Leu Leu Lys Asp Cys Tyr Leu Asn Leu Gln  
 85 90 95  
 Leu Gln Asn Glu Thr Leu Gly Thr Asn Pro His Leu Arg Ser Thr Lys  
 100 105 110  
 Arg Gly Thr Ile Asp Glu Ser Val Lys Arg Glu Ile Pro Phe Lys Asn  
 115 120 125  
 Ala Ile Val Arg Asn His Cys Asn Thr Leu Arg Met Asn Phe Ser Gly  
 130 135 140  
 Asn Tyr Ala Val Glu Phe Arg Val Phe Asp Asn Gly Ile Ala Tyr Arg  
 145 150 155 160

Phe	Val	Thr	Asp	Asn	Lys	Gly	Asp	Asn	Ile	Val	Met	Gly	Glu	Asp	Phe	165	170	175
Ala	Ile	Asn	Phe	Pro	Ala	Asn	Tyr	Lys	Ala	His	Leu	Ser	Gln	Pro	Asp	180	185	190
Gly	Phe	Lys	Thr	Ser	Tyr	Glu	Cys	Pro	Tyr	Thr	His	Val	Asp	Thr	Glu	195	200	205
Lys	Tyr	Ala	Ala	Thr	Asp	Arg	Met	Ser	Tyr	Leu	Pro	Val	Leu	Ile	Glu	210	215	220
Thr	Asp	Lys	Ala	Tyr	Lys	Ile	Leu	Ile	Ser	Glu	Ala	Asp	Leu	Ser	Asp	225	230	235
Tyr	Pro	Cys	Met	Phe	Leu	Lys	Ser	Thr	Gly	Lys	Asn	Gly	Met	Gln	Ser	245	250	255
Ile	Phe	Pro	Lys	Ala	Pro	Leu	Ala	Phe	Gly	Glu	Asp	Gly	Asp	Arg	Ser	260	265	270
Leu	Lys	Ile	Thr	Glu	Glu	Ala	Asp	Tyr	Ile	Ala	Lys	Thr	Asp	Gly	Lys	275	280	285
Arg	Ser	Phe	Pro	Trp	Arg	Met	Met	Val	Ile	Ser	Lys	Glu	Asp	Lys	Glu	290	295	300
Leu	Ile	Glu	Asn	Glu	Met	Val	Tyr	Asn	Leu	Ser	Ala	Pro	Cys	Val	Leu	305	310	315
Glu	Asp	Tyr	Ser	Trp	Ile	Lys	Pro	Gly	Gln	Val	Ser	Trp	Glu	Trp	Trp	325	330	335
His	Asp	Ala	Arg	Leu	Tyr	Gly	Val	Asp	Phe	Arg	Ser	Gly	Phe	Asn	Met	340	345	350
Asp	Ser	Tyr	Lys	Tyr	Tyr	Ile	Asp	Phe	Ala	Ser	Lys	Phe	Gly	Ile	Pro	355	360	365
Tyr	Ile	Ile	Met	Asp	Glu	Gly	Trp	Ala	Lys	Asn	Thr	Arg	Asp	Pro	Phe	370	375	380
Thr	Pro	Asn	Pro	Thr	Ile	Asn	Leu	Thr	Glu	Leu	Ile	Lys	Tyr	Gly	Lys	385	390	395
Asp	Arg	Asn	Val	Lys	Ile	Val	Leu	Trp	Leu	Pro	Trp	Leu	Thr	Val	Glu	405	410	415
Asn	His	Phe	Asp	Leu	Phe	Lys	Thr	Phe	Ala	Asp	Trp	Gly	Ile	Ala	Gly	420	425	430
Val	Lys	Ile	Asp	Phe	Met	Asp	Arg	Ser	Asp	Gln	Trp	Met	Val	Asn	Tyr	435	440	445
Tyr	Glu	Arg	Val	Ala	Lys	Glu	Ala	Ala	Lys	His	Lys	Leu	Phe	Val	Asp	450	455	460
Phe	His	Gly	Ala	Phe	Lys	Pro	Ala	Gly	Leu	Glu	Arg	Lys	Tyr	Pro	Asn	465	470	475
Val	Leu	Ser	Tyr	Glu	Gly	Val	Leu	Gly	Met	Glu	Gln	Gly	Gly	Asn	Cys	485	490	495
Lys	Pro	Glu	Asn	Ser	Ile	Tyr	Leu	Pro	Phe	Met	Arg	Asn	Ala	Val	Gly	500	505	510
Pro	Met	Asp	Phe	Thr	Pro	Gly	Ser	Met	Ile	Ser	Ala	Gln	Pro	Glu	Asp	515	520	525
Asn	Arg	Ser	Thr	Arg	Ala	Asn	Ala	Met	Gly	Ser	Gly	Thr	Arg	Ala	Phe	530	535	540
Gln	Met	Ala	Leu	Phe	Ile	Ile	Phe	Glu	Ser	Gly	Leu	Gln	Met	Leu	Ala	545	550	555
Asp	Asn	Pro	Val	Tyr	Tyr	Tyr	Arg	Glu	Leu	Pro	Cys	Thr	Glu	Phe	Ile	565	570	575
Thr	Ser	Val	Pro	Val	Thr	Trp	Asp	Glu	Thr	Lys	Val	Leu	Tyr	Ala	Lys	580	585	590
Val	Gly	Glu	Ala	Val	Val	Val	Ala	Lys	Arg	Lys	Gly	Glu	Gln	Trp	Phe	595	600	605
Ile	Gly	Gly	Ile	Thr	Gly	Asn	Gln	Pro	Gln	Asn	Ile	Glu	Ile	Asp	Leu	610	615	620
Gly	Phe	Ile	Pro	Ala	Gly	Gln	Ser	Phe	Thr	Leu	Thr	Ser	Phe	Glu	Asp			

625		630		635		640									
Gly	Ile	Asn	Ala	Asp	Arg	Gln	Ala	Met	Asp	Tyr	Lys	Lys	Lys	Glu	Ser
				645					650					655	
Thr	Val	Asn	Asn	Gln	Thr	Arg	Met	Thr	Leu	Lys	Met	Val	Arg	Asn	Gly
			660					665					670		
Gly	Trp	Ala	Gly	Thr	Ile	Lys	Met	Lys							
		675					680								

<210> 8313  
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 <212> PRT  
 <213> B.fragilis

<400> 8313

Phe	Ile	Val	Asp	His	Ser	Ser	Phe	Lys	Asn	Arg	Ser	Ser	Phe	His	Ser
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Ala	Leu	Lys	Leu	His	Gln	His	Arg	Cys	Phe	His	Cys	Phe	His	Phe	Cys
			20					25					30		
Leu	Arg	Gly	Phe	Ile	Gln	Leu	Phe	Lys	Asp	Asn	Asn	Leu	Ile	Phe	Thr
		35					40					45			
Leu	Leu	Gln	Pro	Tyr	Thr	Arg	Asn	Ile	Glu	Cys	Leu	Leu	Arg	Thr	Tyr
	50					55					60				
Phe	Pro	Val	Thr	Ser	Asp	Ile	Asn	Thr	Val	His	Lys	Asn	Asp	Thr	Leu
65					70					75					80
Ser	Pro	Ala	Phe	His	Ile	His	Lys	Cys	Ile	Ser	Asp	Phe	Ile	Gln	Arg
				85					90					95	
Lys	Ser	Pro	Leu	Ile	Lys	His	Arg	Thr	Ala	Phe	Gln	Leu	Ser	His	Phe
			100					105					110		
Arg	Arg	Tyr	Ile	Phe	Met	Cys	Ile	Ser	Phe	Gln	Phe	Gly	Gln	Ile	Gly
		115					120					125			
His	Phe	Val	His	Arg	Gln	Leu	Ile	His	Ile	Pro	Ser	Thr	Asp	Asn	Phe
	130					135					140				
Leu	Pro	Gly	Tyr	Leu	Asn	Arg	Ala	Asn	Asn	Ser	Leu	Gly	Ile	Met	Tyr
145					150				155					160	
Asp	Leu	Ala	Thr	Ile	Ile	Asn	Ala	Ser	His	Ile	Phe	Asn	Gln	Asn	Leu
				165					170					175	
Gln	Ser	Ser	Ile	Lys	Arg	His	Leu	Tyr	Leu	His	Gly	Val	Gly	Leu	Gly
		180						185					190		
Ile	Pro	Ile	Gln	His	Ser	Tyr	Leu	Phe	Thr	Ile	His	Ile	Asn	Asn	Gly
		195					200					205			
Ile	Val	Thr	Gln	Pro	Arg	Asn	Phe	Lys	Cys	Ser	Ala	Asn	Arg	Leu	Ile
	210					215					220				
Glu	Met	Thr	Ser	Ile	Gln	Tyr	Ile	Ser	Ile	Pro	Leu	Ile	Gln	Leu	Phe
225					230					235				240	
Lys	Ser	Gln	Gly	Ser	Ile	Arg	Arg	His	Gly	Leu	Leu	Phe	Phe	Cys	Lys
			245						250					255	
Ser	Lys	Tyr	Ile	Arg	Asn	Phe	Ile	Gln	Leu	Asn	Arg	Arg	Tyr	Phe	Asp
			260					265					270		
Asn	Arg	Ile	Arg	Ser	Arg	Ser	Phe	Arg	Asn	Cys	Ile	Phe	Asn	Ile	Phe
		275					280					285			
Leu	Asp	His	Ile	Ala	Asn	Arg	Ile	Ile	Leu	Trp	Ser	Tyr	Pro	Ala	Cys
	290					295					300				
Leu	Ala	Asn	Arg	Ser	Ile	Ile	Ile	Ile	Thr	Gly	His	Ile	Arg	Leu	Asn
305					310					315				320	
Ile	Thr	Leu	Leu	Ile	Ile	Ile	Ser	Thr	Thr	Arg	Lys	Thr	Lys	Ile	Arg
			325						330					335	
Thr	Ser	Met	His	His	Ile	Glu	Val	Glu	Arg	Asn	Ile	Ile	Leu	Gln	Ile
			340					345					350		
Leu	Leu	Gly	Leu	Thr	Ser	Asn	Pro	Gly	Ser	Ser	Tyr	Leu	Arg	Glu	Arg